

Commonwealth Of Pennsylvania  
Department of Environmental Protection  
Southcentral Regional Office  
July 10, 2012

Subject: Exide Technologies  
Muhlenberg Township and Laureldale Borough, Berks County  
Plan Approval Application No. 06-050661

To: William Weaver *WJW 7/10/12*  
Regional Manager  
Air Quality Program

From: Thomas Hanlon, P.E. *TJH 7/10/12*  
Air Quality Permitting Chief  
Air Quality Program

**Introduction**

Exide Technologies (Exide) submitted a Plan Approval application for their lead acid battery recycling facility located in Muhlenberg Township and Laureldale Borough, Berks County. The facility is located in the Reading air basin.

**Project Description**

This plan approval is for Exide to include and implement additional control measures that will contribute to attainment of the 2008 Lead NAAQS in the North Reading Area. The plan approval will totally enclose existing buildings, add new control equipment, redirect emissions from existing named sources to new or differently named control devices, eliminate some existing named control devices and modify existing Source ID 147 -- Refining Kettles.

Specifically, as part of the plan approval:

1. Exide will totally enclose and extend the Smelter Building to the east to include the air pollution control dust conveyance equipment that is currently outdoors. The height of the enclosure will extend only to the top of the existing U-tube cooler hoppers and will not enclose the U-tubes above that level.
2. Exide will extend a portion of the Smelter Building to the west to totally enclose the Refining Kettles Baghouse (C47) and its related air pollution control dust management activities.
3. Exide will totally enclose and extend the lead dock area, located in a currently outside area at the southeast corner of the Smelter Building.

Upon completion of the Smelter Building enclosure there will be no openings in the smelter building except those necessary to provide adequate emergency personnel evacuation routes.

4. Exide will combine the existing ventilation collection equipment of Smelter Ventilation System 1 (Existing Source ID 124) with the existing ventilation collection equipment of Smelter Ventilation System 2 (Existing Source ID 125) to direct the process fugitive emissions to a new single high efficiency dust collector system. The new combined ventilation and control system will be designated as Control Device ID C62 Baghouse w/ HEPA Smelter System Ventilation.

Primary control of the fugitive dust emissions collected by the system will be provided by woven polyester fabric filters with a Polytetrafluoroethylene (PTFE) membrane finish. Secondary control will be provided by micro-glass fiber High Efficiency Particulate Air (HEPA) filter modules. The new C62 Baghouse w/ HEPA Smelter System Ventilation dust collector will be located on the roof of the Smelter Building Eastern extension and enclosure. The existing Smelter Ventilation System 1 Baghouse dust collector system (C11) will be dismantled.

5. Existing Control Device C28 (AAF Baghouse) currently located along the west wall of the Smelter Building will be eliminated and its ventilation air volume will be replaced by the installation of a new ventilation and high efficiency dust collector system that will collect and control fugitive emissions from the smelter Building. The new ventilation and control system will be designated Control Device ID C63 Baghouse w/HEPA: General Ventilation West. The C63 system will also collect and control fugitive emission from the southern portion of the Raw Materials Storage Building and exhaust emissions from the Refining Kettle burners.

Primary control of the fugitive dust emissions collected by the system will be provided by woven polyester fabric filters with a Polytetrafluoroethylene (PTFE) membrane finish. Secondary control will be provided by micro-glass fiber High Efficiency Particulate Air (HEPA) filter modules. The new C63 Baghouse w/ HEPA General Ventilation West dust collector will be located on the roof of the new truck dump wash sump and pallet storage area enclosure building constructed at the northwest corner of the Battery Shredding Building.

6. Exide will totally enclose and extend the Slag Area Building to the east to include an area on the roadway where vehicle trailers are loaded with crushed blast furnace slag
7. Existing Control Device C29 (Rees Baghouse), currently providing ventilation exhaust air from the slag cooling and storage enclosure, will be eliminated and its ventilation air volume will be replaced by repurposing existing Control Device C19. The existing C19 dust collector currently provides ventilation and control of process fugitive emissions associated with Blast Furnace 2 and Reverberatory Furnace 2. Those emissions will now be captured by Control Device C62.
8. Existing Control Device C46 (UOP Baghouse), currently providing ventilation exhaust air from the slag crushing equipment, will be eliminated and its ventilation air volume will be replaced by repurposing existing Control Device C19.

9. Exide will extend the north end of the Raw Material Storage Building to enclose, among other things, the existing C23A Baghouse 2: Raw Material Storage (Wheelabrator Baghouse) and its related air pollution control dust management activities, the battery shredding area, the battery shredding dock area, and M/A system buildings.
10. Exide will install and operate a new ventilation and high efficiency dust collector system, designated as Control Device ID C64 Baghouse w/HEPA: General Ventilation East, that will collect and control fugitive emissions from inside of the extended and enclosed Raw Material Storage Building

Primary control of the fugitive dust emissions collected by the system will be provided by woven polyester fabric filters with a Polytetrafluoroethylene (PTFE) membrane finish. Secondary control will be provided by micro-glass fiber High Efficiency Particulate Air (HEPA) filter modules. The new C64 Baghouse w/ HEPA: General Ventilation East dust collector will be located on the eastern portion of the roof of the new northern extension of the Raw Material Storage Building

11. Existing Control Device C22(Carborundum Baghouse) and C58 (Flex-Kleen Baghouse) will be eliminated and their ventilation air volume will be replaced and increased by a combination of existing Control Device C23A and new control devices C63 and C64.
12. Exide will reconfigure the Refining Kettles process layout as follows:
  - a. Relocation of existing refining kettle No.4
  - b. Addition of two (2) new 75-ton capacity refining kettles (No.12 and 13) to the south side of Reverberatory Furnace 2

Process fugitive emissions from the relocated and new refining kettles will be captured and controlled by Control Device ID C47. The indirect heating burner exhaust gases from the relocated and new refining kettles will be captured and controlled by new Control Device ID C63.

### Emissions

The projected actual emission increases associated with the addition of two new refining kettles are 1.92 tpy of NOx, 1.15 tpy of CO, 0.01 tpy of SOx, 0.16 tpy of PM10 and 1,640 tpy of CO2e. Also, as a result of including and implementing the additional control measures from all 12 items of the proposed project, emissions of PM10 are expected to decrease by 7.39 tpy, PM2.5 emissions are expected to decrease by 5.79 tpy, and lead emissions are expected to decrease by 0.246 tpy.

### Regulatory Analysis

It should be noted, for regulatory purposes, that the application lists operating hours and numbers for thruputs of lead through the lead smelter area. DEP interprets these as aggregate numbers for informational purposes only, and notes that the operating hours and lead throughput limits in the current Title V permit will remain in force, regardless of the numbers listed in this plan approval application.

#### Prevention of Significant Deterioration (PSD) Applicability

Since the Exide Facility is in a source category listed in 40 CFR 52.21(b)(1)(i)(a) and has a potential to emit sulfur dioxide (SO<sub>2</sub>) at a rate greater than 100 tons per year, the facility is considered a major Prevention of Significant Deterioration (PSD) source for SO<sub>2</sub>. As a result an evaluation of the project emissions increases against the applicable PSD thresholds is required. The tables below show this comparison.

Since the project does not result in an emissions increase of any PSD-regulated pollutant above the respective PSD significance thresholds, PSD is not triggered by this project.

#### Nonattainment New Source Review (NNSR) Applicability

Since, per the tables below, the project does not result in emission increases of NO<sub>x</sub>, VOC and PM-2.5 greater than the significance thresholds for these pollutants, and the net emissions increases of NO<sub>x</sub> and VOC emissions during the last ten (10) years (including the proposed project) is equal to the proposed project increase, NNSR is not triggered by the proposed project. The facility has had 17 Requests for Determination approved over the past 10 years, but none of these have involved an increase in NO<sub>x</sub> or VOC. Also, no plan approvals issued in the past 10 years have involved an increase in NO<sub>x</sub> or VOC emissions.

The project will not remove (debottleneck) any existing capacity limitation of any processes at the facility and thus there are no other affected emission units potentially subject to PSD and NNSR as a result of the project. The addition of the two new refining kettles will not result in an increase in the amount of lead processed through the refining kettles, since the amount of lead available for processing through the refining kettles is limited to the amount of lead produced by the facility furnaces. Furthermore, the existing 12-month emission cap of 0.15 tons of lead for the refining kettles will be incorporated by reference in the proposed plan approval.

As described above, the project also includes fully enclosing within buildings the operations of the Slag Cooling and Storage and Slag Crushing sources at the facility, with air inflow vented to an existing, repurposed control device C19. Since the project to enclose these sources does not modify the sources, their emissions or the control device, these sources are not included in Exide's PSD/NNSR evaluation. Nevertheless, if one were for the sake of argument to include this activity in the PSD/NNSR analysis, the results would be Slag Cooling BAE and PAE of 0.85 tpy for PM<sub>10</sub> and a BAE and PAE of 0.03 tpy for Pb. Slag Crushing would have a BAE and PAE of 1.10 tpy for PM<sub>10</sub> and a BAE and PAE of 0.01 tpy for Pb. The PAE and BAE are based on stack emissions only. Although it is posited by EPA in its recent MACT Subpart X revisions that lead fugitive

emissions from secondary lead smelters are a contributor to lead nonattainment around such facilities, there has been no visible evidence of this occurring at the Slag Operations at the Exide Reading Facility. The same is true for the other sources addressed in this plan approval. Nevertheless, one of the key purposes of this plan approval is to address the possibility of fugitive emissions from such sources by providing more comprehensive and verifiable capture and control of particulate emissions.

For the PSD/NNSR tables below, the baseline actual emissions are based on the time period of September 2007 through August 2009.

Exide revised some of their baseline actual emissions in a letter dated June 12, 2012 (attached) to reflect the totals reported in AIMS for the baseline period. This is because, per 25 Pa. Code 127.203a(a)(4)(i)(F) the BAE may not be "*greater than the emissions previously submitted to the Department in the required emissions statement and for which applicable emission fees have been paid.*" The reason that some of Exide's original baseline actual numbers in this plan approval application were slightly higher than the AIMS reported values was due to adjustments made to the calculation methodologies historically used for calculating emissions for annual reporting purposes. Exide had made those adjustments to provide the most accurate and up to date estimation of emissions for the project. For the same reasoning PM10/PM relationship values originally proposed by Exide were slightly different than what has historically been reported in AIMS. DEP further notes that if one were to use the slightly higher PM and Lead BAE numbers reported by Exide in the original plan approval application for this project, that would not change the overall implications of the PSD/NNSR analysis for this project.

The emission tables provided in Exide's 6/12/12 letter showed several instances where the PM2.5 PAE was higher than the PM10 BAE. This is logically incorrect because PM2.5 is a subset of PM10. Also the project increases related to the Refining Kettles showed PM10 greater than PM. This is logically incorrect because PM10 is a subset of PM. At the Department's request, Exide provided additional revisions to these emissions in a submission dated 6/29/12 (attached). These changes do not affect the overall conclusion of the PSD/NNSR analysis.

Projected actual emissions in the tables below were calculated using the same emission factors as the Baseline Actual Emissions, coupled with 8,760 hrs/yr of operations. Also, projected actual emissions for sources with proposed secondary HEPA controls reflect an additional 50% reduction in lead and particulate emissions, based on those controls.

The BAE calculated does not include any noncompliant emissions.

## Baseline Actual Emissions (tons/yr)

Source	PM	PM10	PM2.5	NOx	SOx	CO	VOC	Pb	As	Cd	CO2e
Smelter Ventilation #1	6.37	5.84	3.19	N/A	N/A	N/A	N/A	0.11	5.00 E-04	7.52 E-04	N/A
Smelter Ventilation #2	2.94	2.70	1.47	N/A	N/A	N/A	N/A	0.08	5.14 E-04	4.64 E-04	N/A
Smelter Building Ventilation	2.92	2.92	2.92	N/A	N/A	N/A	N/A	0.04	1.97 E-04	6.70 E-04	N/A
Raw Material Storage	6.76	6.76	6.76	N/A	N/A	N/A	N/A	0.36	4.56 E-04	4.39 E-04	N/A
Refining Kettles	2.58	2.58	2.58	6.41	0.03	3.85	0.25	0.04	2.40 E-04	3.22 E-05	5,465

## Projected Actual Emissions (tons/yr)

Source	PM	PM10	PM2.5	NOx	SOx	CO	VOC	Pb	As	Cd	CO2e
Smelter Ventilation #1	3.59	3.29	1.80	N/A	N/A	N/A	N/A	0.06	2.82 E-04	4.24 E-04	N/A
Smelter Ventilation #2	1.66	1.53	0.83	N/A	N/A	N/A	N/A	0.05	2.91 E-04	2.63 E-04	N/A
Smelter Building Ventilation	1.69	1.57	1.47	N/A	N/A	N/A	N/A	0.03	9.85 E-05	3.35 E-04	N/A
Raw Material Storage	4.29	4.29	4.29	N/A	N/A	N/A	N/A	0.20	2.51 E-04	2.41 E-04	N/A
Refining Kettles	2.73	2.73	2.73	8.33	0.04	5.00	0.33	0.04	2.38 E-04	3.20 E-05	7,104

**Project Related Emissions and PSD Applicability (tons/yr)**

Source	PM	PM10	NOx	SOx	CO	CO2e
Smelter Ventilation #1	-2.78	-2.55	0.00	0.00	0.00	0.00
Smelter Ventilation #2	-1.28	-1.17	0.00	0.00	0.00	0.00
Smelter Building Ventilation	-1.23	-1.36	0.00	0.00	0.00	0.00
Raw Material Storage	-2.47	-2.47	0.00	0.00	0.00	0.00
Refining Kettles	0.16	0.16	1.92	0.01	1.15	1,640
<i>Total Project Emission Increases</i>	<b>0.16</b>	<b>0.16</b>	<b>1.92</b>	<b>0.01</b>	<b>1.15</b>	<b>1,640</b>
<b>PSD Significance Levels</b>	<b>25</b>	<b>15</b>	<b>40</b>	<b>40</b>	<b>40</b>	<b>75,000</b>
<b>PSD Significance Levels Exceeded?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

**Project Related Emissions and NNSR Applicability (tons/yr)**

Source	PM2.5	NOx	VOC	Pb
Smelter Ventilation #1	-1.39	0.00	0.00	-0.0490
Smelter Ventilation #2	-0.64	0.00	0.00	-0.0243
Smelter Building Ventilation	-1.45	0.00	0.00	-0.0081
Raw Material Storage	-2.47	0.00	0.00	-0.1641
Refining Kettles	0.16	1.92	0.08	-0.0003
<i>Total Project Emission Increases</i>	<b>0.16</b>	<b>1.92</b>	<b>0.08</b>	<b>0.00</b>
<b>NNSR Significance Levels</b>	<b>10</b>	<b>40</b>	<b>100</b>	<b>0.6</b>
<b>NNSR Significance Levels Exceeded?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

It should be noted that, as a practical matter, emissions decreases may generally not be used in project netting for NNSR unless an emission reduction credit (ERC) application has been filed to make the reductions permanent and enforceable. Exide has not elected to do this.

It should also be noted that the Projected Actual Emissions calculation in this application did not make use of the "capable of accommodating" provisions in the regulations. The failure to use this provision would tend to make any emissions increases appear greater than they would have been had this provision been used.

New Source Performance Standards (NSPS)

40 CFR Part 60, Subpart L—Secondary Lead Smelters applies to pot furnaces of more than 550 lb charging capacity, blast (cupola) furnaces, and reverberatory furnaces that commenced construction or modification after June 11, 1973. The blast furnaces and reverberatory furnaces at the Reading facility are not involved in this project, and the refining kettles are not pot kettles used to melt lead scrap. Therefore, the project is not subject to Subpart L.

National Emissions Standards for Hazardous Air Pollutants (NESHAP)

40 CFR Part 63, Subpart X – Secondary Lead Smelting applies to the project. The following sources are subject to the applicable provisions of Subpart X:

<u>Source ID</u>	<u>Source Name</u>
124	Smelter Ventilation System 1
125	Smelter Ventilation System 2
128	Smelter Building Ventilation
129	Slag Cooling and Storage
130	Raw Material Storage
146	Slag Crushing Operation
147	Refining Kettles

Each of the listed sources would be classified as an affected source that commenced construction before May 19, 2011. Of special note is Exide's assertion that the collection of refining kettles at the facility constitutes a single source, and that the addition of two kettles to this source does not meet the 50% replacement cost threshold necessary to qualify the collective refining kettle source as a new source under Subpart X. The Department concurs with this determination. On January 5, 2012, the U.S. EPA issued final amendments to 40 CFR Part 63, Subpart X. The compliance date for Subpart X requirements that are new or changed by the January 5, 2012 amendments, and apply to these sources, is January 6, 2014.

The application notes on Page 4-6, that "All of the measures that are being proposed as part of the NAAQS Control Measures project have been designed to meet the amended requirements of 40 CFR Part 63, Subpart X, and these existing sources at the Reading Facility will comply with the amended requirements no later than the applicable compliance date."

Although compliance with the revised Subpart X is not required until 1/6/14, the Department is proposing a potentially accelerated schedule for compliance with the revised Subpart X (see the NAAQS section below for more details), which will be incorporated into this proposed plan approval.

Also, it should be noted that in the interim period until the revised Subpart X is implemented, all sources will be required to comply with the old version of Subpart X that is found in the facility's current Title V operating permit.

#### Compliance Assurance Monitoring (CAM)

Emission units which are subject to Subpart X are exempt from CAM requirements, due to the high level of control required by Subpart X. The refining kettles are the only source that will experience an increase in pollutants unrelated to Subpart X (NO<sub>x</sub>, SO<sub>2</sub>, CO, or VOC) as a result of this project. Of these pollutants, only SO<sub>2</sub> emissions from the refining kettles are subject to an emissions limit, pursuant to Chapter 123.22(c)(1). Nevertheless, a control device is not required to achieve that limit. Therefore, the refining kettles are not subject to CAM for SO<sub>2</sub>.



Best Available Technology (BAT)

New projects are required by 25 PA Code 127.12(a)(5) to show that the emissions from a new source will be the minimum attainable through the use of the best available technology.

As noted above, the refining kettle changes do not meet the cost thresholds to be considered a new source under Subpart X. By the same token, they would also not meet the cost threshold to be considered a "new source" under 25 PA. Code Section 121.1. Nevertheless, the applicant notes that the two new refining kettle burners will minimize NO<sub>x</sub>, CO, SO<sub>2</sub> and VOC emissions by the use of low-NO<sub>x</sub> burners, good operating procedures and firing only pipeline quality natural gas. PM and lead emissions from the burners of the two new kettles will be controlled by new baghouse C63, with PTFE bags and secondary HEPA filter. PM and lead emissions from the two new refining kettles themselves will be controlled by existing baghouse C47 with PTFE bags.

Sources 129 and 146 will be directed to existing baghouse C19, and the existing controls C29 and C46 will be scrapped. Baghouse C19 currently provides ventilation and control of process fugitive emissions associated with Blast Furnace 2 and Reverberatory Furnace 2. The level of emission control provided by baghouse C19 is expected to be the same as was provided by C29 and C46. Therefore, this reconfiguration of control devices meets the existing BAT and is acceptable.

The plan approval will include the following emission limits for new and repurposed baghouses:

- |                     |  |
|---------------------|--|
| a. C62, C63 and C64 | 0.0002 grains/dscf for PM10<br>0.00006 grains/dscf for lead  |
| b. C19              | 0.0004 grains/dscf for PM10<br>0.00003 grains/dscf for lead  |
| c. C23A             | 0.0004 grains/dscf for PM10<br>0.000026 grains/dscf for lead |
| d. C47              | 0.0004 grains/dscf for PM10<br>0.000056 grains/dscf for lead |

The limits for new baghouses C62, C63 and C64 are based on a 99.9% removal efficiency for the baghouse plus an additional 50% removal efficiency for the HEPA filter. The limits for the existing baghouses are based on a 99.9% removal efficiency for the baghouse. The 0.000056 grains/dscf limit for lead on the C47 baghouse was requested by Exide, and is more restrictive than the calculated 99.9% removal efficiency for the source.

Testing for lead and PM10 will be required on all of the new and repurposed baghouses.

National Ambient Air Quality Standard for Lead (Lead NAAQS):

The expressed purpose of this plan approval application is to authorize actions that will lead towards attainment of the Lead NAAQS in the North Reading Nonattainment Area. Exide submitted to DEP a lead modeling study as a companion to this application in support of the lead attainment efforts.

The Exide facility itself is not specifically in violation as a result of the Lead NAAQS nonattainment designation of the surrounding area. Therefore, this plan approval application is most accurately viewed as a collection of pollution control measures that Exide is proposing in order to contribute towards achieving attainment in the area. DEP does not represent, or even necessarily expect, that the measures proposed in this plan approval will by themselves be sufficient to cause the area to achieve attainment for lead. Nevertheless, the measures proposed are important pollution control measures that Exide cannot legally undertake without first obtaining plan approval. Therefore, provided that the measures proposed in the plan approval are technically sound, it is important for the public and the environment that they be implemented as expeditiously as possible.

DEP presently expects that the provisions of this plan approval, if issued, will eventually be incorporated into a Consent Order and Agreement with Exide, prescribing a schedule by which the project in the plan approval must be completed. Furthermore, in the event that DEP's review of the lead modeling concludes that measures additional to those proposed in this plan approval are necessary to achieve attainment, then 1.) the eventual COA may contain additional lead control measures, and/or 2.) an additional plan approval for additional measures may be required. Ultimately, any COA and/or plan approval(s) would be incorporated into a State Implementation Plan (SIP) submission for EPA.

In order to advance this process as expeditiously as possible, DEP requested that Exide propose in this plan approval application what would be considered Reasonably Available Control Technology and Reasonably Available Control Measures (RACT/RACM). This is because one of the federal requirements for SIPs is that affected facilities must institute RACT/RACM for the affected pollutant. DEP's review of Exide's Lead RACT/RACM proposal is ongoing, and is not expected to be completed prior to finalization of this plan approval. As part of that review, the time will be ripe for DEP to consider certain NAAQS-related lead control comments submitted during the recent Title V renewal process for the Exide Reading Smelter.

It is clear that key components of any Lead RACT/RACM approach for the Exide facility are found in EPA's 1/5/12 Lead MACT revision. DEP notes that, in the regulatory preamble to that revision, EPA states on pages 39-40 that *"After implementation of the controls required in this final rule, we estimate that there will be no one [in the United States] living at a census block centroid exposed to ambient [lead] concentrations above the NAAQS due to these facilities [specifically including the Exide Reading Smelter]. . ."*

With this in mind, DEP is proposing to incorporate certain key elements of 1/5/12 Lead MACT revision, on a potentially accelerated schedule, in this plan approval. The schedule is potentially accelerated because the compliance time-frame for the selected requirements will be based on the time frame of Exide's completion of the building enclosures proposed in this plan approval application. The completion of these enclosures may be sooner than required by the MACT. A precise accelerated deadline for such completion will be selected if and when the plan approval is issued, for incorporation into a COA and eventually into a proposed SIP revision.

The elements of the revised MACT to be incorporated into this plan approval include 1.) stringent lead stack emission limits for those sources addressed in this plan approval, 2.) facility enclosures and monitoring, 3.) fugitive dust housekeeping procedures, and 4.) baghouse inspection and maintenance procedures. It should be noted that the lead stack emission limits for the sources addressed in this plan approval are all proposed at 0.00008 grains/dscf or less, based on preliminary modeling, as compared with the revised MACT limit (facility average) of 0.000087 grains/dscf.

#### Public Comments

On February 21, 2012, Osman Environmental Solutions, LLC, on behalf of the Berks County Commissioners, provided comments on the plan approval application. A summary of the comments and the Department's responses is included in the attached Comment and Response document.

#### Conclusions and Recommendations

The plan approval application including compliance history was received on January 18, 2012. Berks County, Muhlenberg Township and Laureldale Borough were notified of the intent to submit this plan approval application on or about January 3, 2012. All appropriate restrictions, monitoring, testing, work practice standards, record keeping and reporting conditions are included in the plan approval.

I recommend draft Plan Approval 06-05066I be distributed for comments.

#### Attachments:

6/29/12 email from Neal Lebo, All4 Inc.  
6/12/12 letter from Exide  
5/1/12 email from Exide addressing plan approval questions  
4/18/12 email from Exide addressing plan approval questions  
4/5/12 email from Russell Kemp, Environ Corp., addressing emission rates  
3/30/12 letter from Exide addressing comments from Berks County  
3/29/12 email from Exide addressing plan approval questions  
2/21/12 letter from Osman Environmental  
Comment and Response Document regarding 2/21/12 Osman Environmental comments

July 10, 2012

Exide Technologies

cc: Permits  
Reading District  
SC Region 06-050661, B5

Hanlon, Thomas

From: Neal Lebo <nlebo@ALL4INC.COM>  
Sent: Friday, June 29, 2012 8:06 PM  
To: Hanlon, Thomas  
Cc: robin.daub@na.exide.com; Fred.Ganster@exide.com; RCollings@schnader.com  
Subject: RE: Exide  
Attachments: Revised Tables 6-27-12.pdf

Tom:

Provided below are responses to the questions raised in the two emails you sent to me on June 25, 2012.

Question: In your updated baseline actual table (and potentially some trickle down effect on other tables), when you revised the PM10 number, the PM2.5 number became greater than the PM10. Should the PM2.5 number be equal to the PM10? Also, in table 3-3, the PM 10 number is greater than the PM number. Should these two numbers be the same?

Response:

Since PM<sub>10</sub> is the only particulate pollutant reported to PADEP on AIMS reports, when making the adjustments to address 25 Pa. Code §127.203a(a)(4)(F) the values for PM<sub>10</sub> were the only ones adjusted on the revised Table 3-1 provided to you on June 12, 2012. At the time we did not make any adjustments to the values for PM and PM<sub>2.5</sub> since they are not reported on AIMS and are thus not subject to 25 Pa. Code §127.203a(a)(4)(F). You will recall that we used EPA's PM Calculator to estimate emissions for PM fractions. In general, the PM Calculator emission factors for the source types we are adjusting (e.g., Raw Material Storage and Refining Kettles) are based on an assumption that PM = PM<sub>10</sub> = PM<sub>2.5</sub>. In light of your question here, we acknowledge that, for clarity, it is a reasonable option to also adjust the PM and PM<sub>2.5</sub> values in a manner similar to the adjustments made to the PM<sub>10</sub> values. These adjustments are now presented in the Revised Table 3-1 attached to this message. Once again, as shown in Revised Table 3-3 and Revised Table 3-4 attached to this message, respectively, these adjustments do not change the conclusions of Exide's PSD and NNSR evaluation of the proposed NAAQS Control Measures Project presented in the PAA submitted on January 18, 2012.

Question: A few other questions have come up concerning the Exide plan approval:

1. Is it true that all projected actual and baseline emissions are based on stack emissions only, and not fugitives? I recognize that a major part of the plan approval is to enclose buildings to minimize fugitives, but we will need to note whether fugitive emissions were accounted for in the estimates.

Response:

Yes, it is true that all projected actual emissions (PAE) and baseline actual emissions (BAE) estimates are based on stack emissions only.

2. Can you verify again that there are not any non-compliant emissions used in establishing BAE. Specifically source 125 did fail a stack test on 8/25/09. You have stated that you are using August 2009 test data for some of the sources.

Response:

We verify again that there are not any non-compliant emissions used in establishing baseline actual emissions (BAE). As presented in Appendix E, Table E-2 of the Plan Approval Application submitted to PADEP on January 18, 2012, the lead (Pb) emission factor used for Source ID 125 (Smelter Ventilation System 2) is 0.024 pounds per hour (lb/hr), derived by averaging results from stack tests conducted in April 2010 and September 2010. This emission factor is compliant with the comparable applicable Pb emission limit of 0.03 lb/hr established in Title V Permit No. 06-05066, Section E, Group SG02, Condition #003(a).

3. For NNSR purposes, to demonstrate de minimis increases of NO<sub>x</sub> and VOC, you need to do a ten year look back. Can you provide information on increases of those pollutants, either through plan approval of RFD over the past 10 years? Can you also provide the number of RFDs submitted over the last 10 years?

**Response:**

There have been no Plan Approvals or Requests for Determination of Exemption from Plan Approval/Operating Permit (RFD) in the last 10 years which have resulted in increased emissions of NO<sub>x</sub> or VOC. As requested, below is a list of RFDs submitted over the last 10 years.

RFD Description	Date of Implementation
Replacement of northern portion of Raw Material Storage Building	TBD
Installation of ePTFE membrane filter bags in C11, C47 and C22	11/30/2011
Scrubber System 1 & 2 - Cyclonic Chamber Replacements	11/28/2011
Intermediate Feed System - Reverb #2	03/14/2011
Central Vacuum System	02/07/2011
Air/Oxy Fuel Burners	12/01/2009
Mobile Pallet Shredder & Road Sweeper	08/01/2009
#1 Intermediate Feed Screw	07/01/2008
Mobile Pallet Shredder	11/2007
Reverb #2 Intermediate Screw	11/2007
Reverb #2 Damper	10/2005
Reverb #2 Belt/Screw Feeder	10/2005
Reverb #1 Belt/Screw Feeder	07/2005
Slag Crusher	10/2004

Please call or email me if you need anything further.

Best regards,

Neal

**Neal S. Lebo**

*Project Manager*

**ALL4 Inc.**

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[www.enviroreview.com](http://www.enviroreview.com) – ALL4's customized environmental regulatory updates

Have you checked out ALL4's [Blog](#) this week?

**From:** Hanlon, Thomas [mailto:thanlon@pa.gov]

**Sent:** Monday, June 25, 2012 3:37 PM

**To:** Neal Lebo

**Subject:** RE: Exide

Hi Neal,

A few other questions have come up concerning the Exide plan approval:

4. Is it true that all projected actual and baseline emissions are based on stack emissions only, and not fugitives? I recognize that a major part of the plan approval is to enclose buildings to minimize fugitives, but we will need to note whether fugitive emissions were accounted for in the estimates.
5. Can you verify again that there are not any non-compliant emissions used in establishing BAE. Specifically source 125 did fail a stack test on 8/25/09. You have stated that you are using August 2009 test data for some of the sources.
6. For NNSR purposes, to demonstrate de minimis increases of NOx and VOC, you need to do a ten year look back. Can you provide information on increases of those pollutants, either through plan approval of RFD over the past 10 years? Can you also provide the number of RFDs submitted over the last 10 years?

Thanks,

Tom

---

**From:** Hanlon, Thomas  
**Sent:** Monday, June 25, 2012 1:17 PM  
**To:** 'Neal Lebo'  
**Subject:** RE: Exide

Hi Neal,

In your updated baseline actual table (and potentially some trickle down effect on other tables), when you revised the PM10 number, the PM2.5 number became greater than the PM10. Should the PM2.5 number be equal to the PM10? Also, in table 3-3, the PM 10 number is greater than the PM number. Should these two numbers be the same?

Thanks,

Tom

---

**From:** Neal Lebo [<mailto:nlebo@ALL4INC.COM>]  
**Sent:** Thursday, June 14, 2012 12:37 PM  
**To:** Hanlon, Thomas  
**Subject:** RE: Exide

Tom:

Our apologies. It is a significant digit rounding difference caused by a formatting glitch in the spreadsheet we used to create the tables. We intended it to appear as shown on the attached version of the table. There is no change in lead emissions expected.

Neal

---

**From:** Hanlon, Thomas [<mailto:thanlon@pa.gov>]  
**Sent:** Thursday, June 14, 2012 12:17 PM  
**To:** Neal Lebo  
**Subject:** Exide

Hi Neal,

Is the slight difference in BAE and PAE for lead in the Slag Crushing Area a significant digit reporting difference, or is a slight decrease expected in lead emissions?

Thanks,

Attachment 3  
Table 3-3 Revision 2  
Summary of Project-Related Emissions and PSD Applicability for NAAQS Control Measures Project  
Exide Technologies - Reading, Pennsylvania  
(tons/yr)

Source	PM	PM <sub>10</sub>	NO <sub>x</sub>	SO <sub>2</sub>	CO	Total GHG	Non-Exogenic CO <sub>2e</sub>
Smelter Ventilation #1	-2.78	-2.55	0.00	0.00	0.00	0.00	0.00
Smelter Ventilation #2	-1.28	-1.17	0.00	0.00	0.00	0.00	0.00
Smelter Building Ventilation	-1.24	-1.36	0.00	0.00	0.00	0.00	0.00
Raw Material Storage	-2.47	-2.47	0.00	0.00	0.00	0.00	0.00
Refining Kettles	0.06	-0.16	1.92	0.01	1.15	1.638	1.640
<b>PSD Applicability Step 1: Total Project Emissions Increases</b>	<b>0.16</b>	<b>0.16</b>	<b>1.92</b>	<b>0.01</b>	<b>1.15</b>	<b>1.638</b>	<b>1.640</b>
<b>PSD Significance Levels Exceeded?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<b>Project Increases Exceed PSD Significance Levels?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

Notes:

- 1) NSR Significance Levels as listed in 40 CFR §52.21(b)(23)(1) and 25 Pa. Code §121.1.
- 2) Projected actual emissions increases based upon the following future hours of operation and anticipated incremental increases:  
Future Hours per Year: 8,760
- 3) This emissions summary was developed solely for the purpose of evaluating the PSD and NSR applicability of the proposed NAAQS Control Measures Project. The emission data presented was not developed in a manner suitable for use in any way to demonstrate attainment of the Pb NAAQS, and is not intended for any such use. Exide has separately prepared and submitted to PADEP an air quality dispersion modeling report for the purpose of demonstrating attainment of the Pb NAAQS.

Indicates revised value due to baseline emissions adjustment.

Revised: 6/26/2012



**Attachment 4**  
**Table 3-4 Revision 2**  
**Summary of Project-Related Emissions and NSR Applicability for**  
**NAAQS Control Measures Project**  
**Exide Technologies - Reading, Pennsylvania**  
**(tons/yr)**

Source	PM <sub>2.5</sub>	NO <sub>x</sub>	VOC	Pb
Smelter Ventilation #1	-1.39	0.00	0.00	-0.0490
Smelter Ventilation #2	-0.64	0.00	0.00	-0.0243
Smelter Building Ventilation	-1.46	0.00	0.00	-0.0081
Raw Material Storage	-2.47	0.00	0.00	-0.1641
Refining Kettles	-0.16	1.92	0.08	-0.0003
<b>NNSR Applicability Step 1: Total Project Emissions Increases</b>	<b>0.16</b>	<b>1.92</b>	<b>0.08</b>	<b>-0.0003</b>
<b>NNSR Significance Levels</b>	<b>10</b>	<b>40</b>	<b>100</b>	<b>0.6</b>
<b>Project Increases Exceed NNSR Significance Levels?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

**Notes:**

- 1) NSR Significance Levels as listed in 40 CFR §52.21(b)(23)(i) and 25 Pa. Code §121.1.
- 2) Projected actual emissions increases based upon the following future hours of operation and anticipated incremental increases:  
Future Hours per Year: 8,760
- 3) This emissions summary was developed solely for the purpose of evaluating the PSD and NSR applicability of the proposed NAAQS Control Measures Project. The emission data presented was not developed in a manner suitable for use in any way to demonstrate attainment of the Pb NAAQS, and is not intended for any such use. Exide has separately prepared and submitted to PADEP an air quality dispersion modeling report for the purpose of demonstrating attainment of the Pb NAAQS.

Indicates revised value due to  
baseline emissions adjustment.

Revised: 6/26/2012

**Attachment 2**  
**Table 3-2 Revision 2**  
**Summary of Projected Actual Emissions for NAAQS Control Measures Project**  
**Exide Technologies - Reading, Pennsylvania**  
**(tons/yr)**

Source	PM	PM <sub>10</sub>	PM <sub>2.5</sub>	NO <sub>x</sub>	SO <sub>2</sub>	CO	VOC	Pb	As	Cd	Total GHG	Non-Biogenic CO <sub>2e</sub>
Smelter Ventilation #1	3.39	3.29	1.80	N/A	N/A	N/A	N/A	0.06	2.82E-04	4.24E-04	N/A	N/A
Smelter Ventilation #2	1.66	1.53	0.83	N/A	N/A	N/A	N/A	0.05	2.91E-04	2.63E-04	N/A	N/A
Smelter Building Ventilator	1.69	1.57	1.47	N/A	N/A	N/A	N/A	0.03	9.85E-05	3.35E-04	N/A	N/A
Raw Material Storage	4.29	4.29	4.29	N/A	N/A	N/A	N/A	0.20	2.51E-04	2.41E-04	N/A	N/A
Reclaiming Kettles	2.73	2.73	2.73	8.33	0.04	5.00	0.33	3.97E-02	2.38E-04	3.20E-05	7,097.92	7,104.73
<b>Total Projected Future Actual Emissions (All Modified and Affected Units)</b>	<b>13.96</b>	<b>13.41</b>	<b>11.12</b>	<b>8.33</b>	<b>0.04</b>	<b>5.00</b>	<b>0.33</b>	<b>0.38</b>	<b>1.16E-03</b>	<b>1.30E-03</b>	<b>7,097.92</b>	<b>7,104.73</b>
Slag Cooling and Storage	N/A	0.85	N/A	N/A	N/A	N/A	N/A	0.03	3.73E-04	8.40E-05	N/A	N/A
Slag Crushing	N/A	1.10	N/A	N/A	N/A	N/A	N/A	0.01	6.59E-05	1.42E-05	N/A	N/A

**Notes:**

- 1) Projected actual emissions increases based upon the following future hours of operation and anticipated incremental increases  
 Future Hours per Year: 3,970,000
- 2) This emissions summary was developed solely for the purpose of evaluating the PSD and NNSR applicability of the proposed NAAQS Control Measures Project. The emission data presented was not developed in a manner suitable for use in any way to demonstrate attainment of the Pb NAAQS, and is not intended for any such use. Exide has separately prepared and submitted to PADEP an air quality dispersion modeling report for the purpose of demonstrating attainment of the Pb NAAQS.
- 3) Arsenic and Cadmium emissions based on analytical results from baghouse dust and the comparative relationship to known PM emissions.
- 4) Estimated emissions for Slag Cooling and Storage and Slag Crushing sources added at request of Pennsylvania Department of the Environmental Protection.

Revised: 6/26/2012

**Attachment 1**  
**Table 3-1 Revision 2**  
**Summary of Baseline Actual Emissions for NAAQS Control Measures Project**  
**Exide Technologies - Reading, Pennsylvania**  
**(tons/yr)**

Source	PM	PM <sub>10</sub>	PM <sub>2.5</sub>	NO <sub>x</sub>	SO <sub>2</sub>	CO	VOC	Pb	As	Cd	Total GHG	Non-Biogenic CO <sub>2e</sub>
Smelter Ventilation #1	6.37	5.84	3.19	N/A	N/A	N/A	N/A	0.11	5.00E-04	7.52E-04	N/A	N/A
Smelter Ventilation #2	2.94	2.70	1.47	N/A	N/A	N/A	N/A	0.08	5.14E-04	4.64E-04	N/A	N/A
Smelter Building Ventilation	32.92	32.92	32.92	N/A	N/A	N/A	N/A	0.04	1.71E-04	5.81E-04	N/A	N/A
Raw Material Storage	6.76	6.76	6.76	N/A	N/A	N/A	N/A	0.36	3.96E-04	3.80E-04	N/A	N/A
Refining Kettles	2.53	2.53	2.53	6.41	0.03	3.85	0.25	0.04	2.25E-04	3.02E-03	5,459.94	5,465.18
Total Projected Future Actual Emissions (All Modified and Affected Units)	71.57	70.79	16.91	6.41	0.03	3.85	0.25	0.63	1.80E-03	7.21E-03	5,459.94	5,465.18
Slag Cooling and Storage	N/A	0.85	N/A	N/A	N/A	N/A	N/A	0.03	3.73E-04	8.40E-05	N/A	N/A
Slag Crushing	N/A	1.10	N/A	N/A	N/A	N/A	N/A	0.01	6.59E-05	1.42E-05	N/A	N/A

Notes:  
1) This emissions summary was developed solely for the purpose of evaluating the PSD and NNSR applicability of the proposed NAAQS Control Measures Project. The emission data presented was not developed in a manner suitable for use in any way to demonstrate attainment of the Pb NAAQS, and is not intended for any such use. Exide has separately prepared and submitted to PADEP an air quality dispersion modeling report for the purpose of demonstrating attainment of the Pb NAAQS.  
2) Arsenic and Cadmium emissions based on analytical results from baghouse dust and the comparative relationship to known PM emission.  
3) Estimated emissions for Slag Cooling and Storage and Slag Crushing sources added at request of Pennsylvania Department of the Environmental Protection

Indicates baseline emissions adjusted downward to be consistent with values reported on AIMS for baseline period

Revised: 6/26/2012



June 12, 2012

Exide Technologies  
Reading Recycling  
P.O. Box 14294  
Reading, PA 19612-1294  
610.921.4004

Mr. Tom Hanlon  
Environmental Engineering Manager  
Pennsylvania Department of Environmental Protection  
Southcentral Regional Office  
909 Elmerton Avenue  
Harrisburg, PA 17110-8200

RE: Exide Technologies Reading, PA Facility  
Response to Comments/Questions of PADEP on  
NAAQS Control Measures Plan Approval Application

Dear Mr. Hanlon:

The Exide Technologies Reading, PA Facility (Exide) is pleased to provide this response to questions and comments received from the Pennsylvania Department of Environmental Protection (PADEP) regarding the National Ambient Air Quality Standards (NAAQS) Control Measures Plan Approval Application (PAA) submitted to PADEP on January 18, 2012. PADEP's comments and questions addressed herein were transmitted to Exide in your email sent to Exide's Ms. Robin Daub on May 15, 2012. The comments and questions are summarized below followed by Exide's responses.

Comments and Questions for Preparation of Draft Plan Approval

*PADEP Comment #1. A quantification of emissions of arsenic and cadmium from the facility is necessary. Please provide this.*

As part of U.S. EPA's evaluation of residual risk that resulted in recent amendments to 40 CFR 63 Subpart X National Emission Standards for Hazardous Air Pollutants (NESHAP) from Secondary Lead (Pb) Smelting, U.S. EPA considered risk metrics associated with stack emissions of non-Pb metal hazardous air pollutants (HAP) such as arsenic and cadmium and, since it found that an appropriate reduction in the stack Pb concentration limit ensures acceptable risk from non-Pb metal HAPS, U.S. EPA determined it was not necessary to set additional limits for non-Pb metal HAPS. For this reason Exide did not include a quantification of arsenic, cadmium or any other non-Pb metal HAP in the PAA.

Exide has historically estimated arsenic and cadmium emissions to air for SARA 313 Toxic Release Inventory (TRI) reporting purposes. The calculation methodology used by Exide for these estimates has been based on analytical results from sampling of baghouse dust and the comparative relationship of the levels of arsenic and cadmium found in the baghouse dust to known emissions of particulate matter (PM). In response to this request

from PADEP, using this same methodology Exide has estimated the arsenic and cadmium emissions related to the NAAQS Control Measures Project. The project baseline actual emissions (BAE) of arsenic and cadmium are presented in Revised Table 3-1 included as Attachment 1 to this letter. The project projected actual emissions (PAE) of arsenic and cadmium are presented in Revised Table 3-2 included as Attachment 2 to this letter.

*PADEP Comment #2. What are the baseline actual emissions of the slag cooling and storage areas with the current control devices compared to the projected actual emissions with repurposed control device?*

As stated in Section 3. of the PAA Narrative, the Emission Inventory presented in the PAA was developed solely for the purpose of evaluating the Prevention of Significant Deterioration (PSD) and Non-attainment New Source Review (NNSR) applicability of the proposed NAAQS Control Measures Project. Since the proposed project to enclose the Slag Cooling and Storage and Slag Crushing sources does not modify the sources, their emissions, or the repurposed control device, PSD and NNSR are not potentially applicable and it was not necessary to include BAE and PAE for these sources in the PAA Emission Inventory. However, in the interest of completeness, Exide did include updated PAA Process Forms for these sources.

In response to this question from PADEP, Exide has estimated what the project BAE for the Slag Cooling and Storage and Slag Crushing sources would be. The baseline period Exide used to evaluate those sources that were potentially applicable to PSD and NNSR was the period September 2007 through August 2009.<sup>1</sup> Exide determined what the BAE for the Slag Cooling and Storage and Slag Crushing sources would be based on the actual values reported to PADEP in Emission Inventory Production (a.k.a. AIMS) reports for this baseline period. These BAE are presented in Revised Table 3-1 included as Attachment 1 to this letter. Since there are no proposed modifications to these sources or the technology used to control their emissions, no change in these BAE are expected as a result of the NAAQS Control Measures Project. Nevertheless, for completeness these same emission levels are presented as what the PAE would be in Revised Table 3-2 included as Attachment 2 to this letter.

*PADEP Comment #3. Have there been any RFD approvals or plan approvals in the last 10 years which have increased NOx or VOC emissions at the facility? If so, these would need to be accounted for in determining the net emission increase and if the increase is de minimis, as per 127.203a(a)(2).*

There have been no Plan Approvals or Requests for Determination of Exemption from Plan Approval/Operating Permit (RFD) in the last 10 years which have resulted in increased emissions that need to be accounted for in determining emission increases related to the proposed NAAQS Control Measures Project.

<sup>1</sup> Section 3.2.1 of the PAA Narrative.

Comments and Questions Related to Emission Inventory Information

*PADEP Comment #1. Smelter Building Ventilation PM<sub>10</sub>/PM relationship – According to the paragraph on page 3-8 under PM<sub>10</sub>, PM<sub>10</sub> should be equal to 85% of PM for this source. In Table 3-1 PM<sub>10</sub> is equal to 93% of PM. Past AIMS reports have used the 85% factor. Please explain.*

On page 3-8 of the PAA Narrative the reference to an 85% relationship of PM<sub>10</sub> to PM describes how Exide “historically calculated” PM<sub>10</sub> for annual reporting purposes based on “the results of the filterable particulate emission test conducted in August 1986, the actual hours of operation that occurred during each respective calendar year, and an assumption presented in historic U.S. EPA AP-42 guidance that PM<sub>10</sub> is equal to 85% of PM for this type of source.” That historic guidance that PM<sub>10</sub> is equal to 85% of PM can no longer be found in AP-42, as it has been replaced with U.S. EPA’s PM Calculator which provides emission factors for PM fractions based on actual emissions testing of different source types used in specific industries, including secondary lead smelting. Thus, as stated in the next sentence in that paragraph on page 3-8, “For the purposes of this application, baseline filterable PM<sub>10</sub> emissions are calculated based on the results of the emission test conducted in 1986, the actual hours of operation that occurred at the source during the 24-month baseline period, and U.S. EPA’s PM Calculator.” Exide adjusted the calculation methodology to provide the most up-to-date and accurate estimation of emissions, which resulted in the 93% relationship observed in Table 3-1 of the PAA submitted on January 18, 2012.

*PADEP Comment #2. Raw Material Storage PM<sub>10</sub>/PM relationship - According to the paragraph on page 3-9 under PM<sub>10</sub>, PM<sub>10</sub> should be equal to 85% of PM for this source. In Table 3-1 PM<sub>10</sub> is equal to 100% of PM. Past AIMS reports have used the 85% factor. Please explain.*

On page 3-9 of the PAA Narrative the reference to an 85% relationship of PM<sub>10</sub> to PM describes how Exide “historically calculated” PM<sub>10</sub> for annual reporting purposes based on “the results of the filterable particulate emission test conducted in August 1986, the actual hours of operation that occurred during each respective calendar year, and an assumption presented in historic U.S. EPA AP-42 guidance that PM<sub>10</sub> is equal to 85% of PM for this type of source.” That historic guidance that PM<sub>10</sub> is equal to 85% of PM can no longer be found in AP-42, as it has been replaced with U.S. EPA’s PM Calculator which provides emission factors for PM fractions based on actual emissions testing of different source types used in specific industries, including secondary lead smelting. Thus, as stated in the next sentence in that paragraph on page 3-9, “For the purposes of this application, baseline filterable PM<sub>10</sub> emissions are calculated based on the results of the emission test conducted in 1986, the actual hours of operation that occurred at the source during the 24-month baseline period, and U.S. EPA’s PM Calculator.” Exide adjusted the calculation methodology to provide the most up-to-date and accurate estimation of emissions, which resulted in the 100% relationship observed in Table 3-1 of the PAA submitted on January 18, 2012.

*PADEP Comment #3. Refining Kettles PM10/PM relationship - According to the paragraph on page 3-10 under PM10, PM10 should be equal to 92% of PM for this source. In Table 3-1 PM10 is equal to 100% of PM. Past AIMS reports have used the 92% factor. Please explain.*

On page 3-10 of the PAA Narrative the reference to a 92% relationship of PM<sub>10</sub> to PM describes how Exide "historically calculated" PM<sub>10</sub> for annual reporting purposes based on "the results of the filterable particulate emission test conducted in October 2000, the actual hours of operation that occurred during each respective calendar year, and an assumption presented in historic U.S. EPA AP-42 guidance that PM<sub>10</sub> is equal to 92% of PM for this type of source." That historic guidance that PM<sub>10</sub> is equal to 92% of PM can no longer be found in AP-42, as it has been replaced with U.S. EPA's PM Calculator which provides emission factors for PM fractions based on actual emissions testing of different source types used in specific industries, including secondary lead smelting. Thus, as stated in the next sentence in that paragraph on page 3-10, "For the purposes of this application, baseline filterable PM<sub>10</sub> emissions are calculated based on the results of the emission test conducted in October 2000, the actual hours that the Refining Kettles operated during the 24-month baseline period, and U.S. EPA's PM Calculator." Exide adjusted the calculation methodology to provide the most up-to-date and accurate estimation of emissions, which resulted in the 100% relationship observed in Table 3-1 of the PAA submitted on January 18, 2012.

*PADEP Comment #4. Please provide detail on how the lead baseline actual numbers were calculated, particularly for Smelter Ventilation #1 and the Raw Materials Storage.*

The baseline period Exide used to evaluate those sources that were potentially applicable to PSD and NNSR was the period September 2007 through August 2009.<sup>2</sup> Exide conducts Pb emission testing of certain sources at least once every two (2) years. Baseline Pb emissions for each source included in the PAA Emission Inventory are calculated based on emission factors derived from the results of the most recent Pb emission test conducted and the actual hours of operation that occurred during the 24-month baseline period.

For the Smelter Ventilation #1 source the most recent Pb emission tests representative of the baseline period was conducted in August of 2009 and yielded an average Pb emission rate of 0.0289 pounds per hour (lb/hr). This emission rate was applicable to all months in the baseline period. The average annualized actual hours of operation of the Smelter Ventilation #1 source during the baseline period was 7,769 hours per year (hr/yr). The baseline Pb emissions are thus calculated as follows:

<sup>2</sup> Section 3.2.1 of the PAA Narrative.

$$\frac{0.0289 \text{ lb/hr} \times 7,769 \text{ hr/yr}}{2,000 \text{ lb/ton}} = 0.11 \text{ tons per year (tons/yr)}$$

For the Raw Material Storage source the most recent Pb emission tests representative of the baseline period was also conducted in August of 2009 and yielded an average Pb emission rate of 0.0833 lb/hr. This emission rate was applicable to all months in the baseline period. The average annualized actual hours of operation of the Raw Material Storage source during the baseline period was 8,760 hr/yr. The baseline Pb emissions are thus calculated as follows:

$$\frac{0.0833 \text{ lb/hr} \times 8,760 \text{ hr/yr}}{2,000 \text{ lb/ton}} = 0.36 \text{ tons/yr}$$

The emission factors and baseline actual hours of operation used to calculate BAE for all sources included in the Emission Inventory are presented in Appendix E, Table E-2 of the PAA submitted to PADEP on January 18, 2012.

*PADEP Comment #5. Why was test data from a 1984 test chosen for baseline calculations?*

Exide assumes that this question is regarding the use of emission test data from August of 1984 to derive PM emission factors for the Smelter Ventilation System 1 and Smelter Ventilation System 2 sources. This August 1984 data is the most recent available emission test data for PM from these specific sources. Since there are no continuous emission monitoring systems (CEMS) or predictive emissions monitoring systems (PEMS) for PM required or installed on these sources, pursuant to 25 Pa. Code §127.203a(a)(4)(iii), stack test derived emissions factors are the preferred method for determining BAE. There have been no changes in the design and operation of these sources since 1984 to indicate that the available test data is not representative for these sources. For these reasons, Exide used the most recent available emission test data for PM to calculate BAE for all sources included in the Emission Inventory.

*PADEP Comment #6. Please note that per Subchapter E the BAE may not exceed previously reported emissions for the same time period for which fees have been paid. Please verify that the BAE values for the pollutants are not greater than the values reported on AIMS for the baseline period.*

When developing the Emission Inventory for the proposed NAAQS Control Measures Project, Exide made adjustments to the calculation methodologies historically used for calculating emissions for annual reporting purposes. These adjustments were made in order to provide the most up-to-date and accurate estimation of emissions for the project. This does result in several instances where the BAE presented in the PAA Emission Inventory are slightly higher than the actual values reported to PADEP on AIMS reports for the baseline period (September 2007 through August 2009). For example, the PM<sub>10</sub>



emissions from the Refining Kettles source reported on AIMS reports for the baseline period were 2.58 tons/yr, but the PM<sub>10</sub> BAE presented in the PAA Emission Inventory for the Refining Kettles is 2.75 tons/yr.

In response to this comment from PADEP, for those instances where the BAE presented in the PAA Emission Inventory are higher than the actual values reported to PADEP on AIMS reports for the baseline period, Exide has adjusted the BAE values downward to be consistent with values reported to PADEP on AIMS reports for the baseline period. These adjustments are presented in Revised Table 3-1 included as Attachment 1 to this letter. As shown in Revised Table 3-3 and Revised Table 3-4 included as Attachments 3 and 4 to this letter, respectively, these adjustments have no effect on the conclusions of Exide's PSD and NNSR evaluation of the proposed NAAQS Control Measures Project presented in the PAA submitted on January 18, 2012.

*PADEP Comment #7. Please verify that none of the emissions used in the BAE period were the result of non-compliant activities. If there are non-compliant emissions, the BAE would have to be recalculated.*

None of the information used to determine BAE reflects non-compliant activities.

If you have any questions regarding our responses to PADEP's comments and questions provided herein, please feel free to contact me by telephone at (610) 921-4170, or by email at [robin.daub@na.exide.com](mailto:robin.daub@na.exide.com).

Sincerely,  
Exide Technologies



Robin S. Daub  
EHS Manager

Attachments 1 through 4

Attachment 1  
Table 3-1 Revised  
Summary of Baseline Actual Emissions for NAAQS Control Measures Project  
Exide Technologies - Reading, Pennsylvania  
(tons/yr)

Source	PM	PM <sub>10</sub>	PM <sub>2.5</sub>	NO <sub>x</sub>	SO <sub>2</sub>	CO	VOC	Pb	As	Cd	Total GHG	Non-Biogenic CO <sub>2</sub> e
Smelter Ventilation #1	6.37	5.84	3.19	N/A	N/A	N/A	N/A	0.11	5.00E-04	7.52E-04	N/A	N/A
Smelter Ventilation #2	2.94	2.70	1.47	N/A	N/A	N/A	N/A	0.08	5.14E-04	4.64E-04	N/A	N/A
Smelter Building Ventilation	3.37	2.92	2.93	N/A	N/A	N/A	N/A	0.36	1.97E-04	6.70E-04	N/A	N/A
Raw Material Storage	7.80	6.76	7.80	N/A	N/A	N/A	N/A	0.04	4.56E-04	4.39E-04	5,459.94	5,465.18
Refining Kettles	2.75	2.58	2.75	6.41	0.03	3.85	0.25	0.03	2.40E-04	3.22E-05	N/A	N/A
Total Projected Future Actual Emissions (All Modified and Affected Units)	23.23	20.79	18.14	6.41	0.03	3.85	0.25	0.63	1.91E-03	2.36E-03	5,459.94	5,465.18
Slag Cooling and Storage	N/A	0.85	N/A	N/A	N/A	N/A	N/A	0.03	3.73E-04	8.40E-05	N/A	N/A
Slag Crushing	N/A	1.10	N/A	N/A	N/A	N/A	N/A	0.01	6.59E-05	1.42E-05	N/A	N/A

Notes:  
1) This emissions summary was developed solely for the purpose of evaluating the PSD and NSR applicability of the proposed NAAQS Control Measures Project. The emission data presented was not developed in a manner suitable for use in any way to demonstrate attainment of the Pb NAAQS, and is not intended for any such use. Exide has separately prepared and submitted to PADEP an air quality dispersion modeling report for the purpose of demonstrating attainment of the Pb NAAQS.  
2) Arsenic and Cadmium emissions based on analytical results from baghouse dust and the comparative relationship to known PM emission.  
3) Estimated emissions for Slag Cooling and Storage and Slag Crushing sources added at request of Pennsylvania Department of the Environmental Protection

Indicates baseline emissions adjusted downward to be consistent with values reported on AIMS for baseline period  
Revised: 6/7/2012

Attachment 2  
Table 3-2 Revised  
Summary of Projected Actual Emissions for NAAQS Control Measures Project  
Exide Technologies - Reading, Pennsylvania  
(tons/yr)

Source	PM	PM <sub>10</sub>	PM <sub>2.5</sub>	NO <sub>x</sub>	SO <sub>2</sub>	CO	VOC	Pb	As	Cd	Total GHG	Non-Biogenic CO <sub>2</sub> e
Smelter Ventilation #1	3.39	3.29	1.80	N/A	N/A	N/A	N/A	0.06	2.82E-04	4.24E-04	N/A	N/A
Smelter Ventilation #2	1.66	1.53	0.83	N/A	N/A	N/A	N/A	0.05	2.91E-04	2.63E-04	N/A	N/A
Smelter Building Ventilation	1.69	1.57	1.47	N/A	N/A	N/A	N/A	0.03	9.83E-05	3.33E-04	N/A	N/A
Raw Material Storage	4.29	4.29	4.29	N/A	N/A	N/A	N/A	0.20	2.51E-04	2.41E-04	N/A	N/A
Refining Kettles	2.73	2.73	2.73	8.33	0.04	5.00	0.33	3.97E-02	2.38E-04	3.20E-05	7.097.92	7.104.73
Total Projected Future Actual Emissions (All Modified and Affected Units)	13.96	13.41	11.12	8.33	0.04	5.00	0.33	0.38	1.16E-03	1.30E-03	7.097.92	7.104.73
Slag Cooling and Storage	N/A	0.85	N/A	N/A	N/A	N/A	N/A	0.03	3.73E-04	8.40E-05	N/A	N/A
Slag Crushing	N/A	1.10	N/A	N/A	N/A	N/A	N/A	0.01	6.59E-05	1.42E-05	N/A	N/A

Notes:

- 1) Projected actual emissions increases based upon the following future hours of operation and anticipated incremental increases  
Future Hours per Year: 168,768
- 2) This emissions summary was developed solely for the purpose of evaluating the PSD and NNSR applicability of the proposed NAAQS Control Measures Project. The emission data presented was not developed in a manner suitable for use in any way to demonstrate attainment of the PSD NAAQS, and is not intended for any such use. Exide has separately prepared and submitted to PADEP an air quality dispersion modeling report for the purpose of demonstrating attainment of the PSD NAAQS.
- 3) Arsenic and Cadmium emissions based on analytical results from baghouse dust and the comparative relationship to known PM emission.
- 4) Estimated emissions for Slag Cooling and Storage and Slag Crushing sources added at request of Pennsylvania Department of the Environmental Protection

Revised: 6/14/2012

Attachment 3  
Table 3-3 Revised  
Summary of Project-Related Emissions and PSD Applicability for NAAQS Control Measures Project  
Exide Technologies - Reading, Pennsylvania  
(tons/yr)

Source	PM	PM <sub>10</sub>	NO <sub>x</sub>	SO <sub>2</sub>	CO	Total GHG	Non-Biogenic CO <sub>2</sub> e
Smelter Ventilation #1	-2.78	-2.55	0.00	0.00	0.00	0.00	0.00
Smelter Ventilation #2	-1.28	-1.17	0.00	0.00	0.00	0.00	0.00
Smelter Building Ventilation	-1.69	-1.36	0.00	0.00	0.00	0.00	0.00
Raw Material Storage	-3.51	-2.47	0.00	0.00	0.00	0.00	0.00
Refining Kettles	-0.02	-0.16	1.92	0.01	1.15	1.638	1.640
<b>PSD Applicability Step 1: Total Project Emissions Increases</b>	<b>0.00</b>	<b>0.16</b>	<b>7.92</b>	<b>0.01</b>	<b>7.15</b>	<b>1.638</b>	<b>1.640</b>
<b>PSD Significance Levels</b>	<b>725</b>	<b>15</b>	<b>40</b>	<b>40</b>	<b>40</b>	<b>40</b>	<b>25,000</b>
<b>Project Increases Exceed PSD Significance Levels?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

Notes:

- 1) NSR Significance Levels as listed in 40 CFR §52.21(b)(23)(i) and 25 Pa. Code §121.1.
- 2) Projected actual emissions increases based upon the following future hours of operation and anticipated incremental increases:  
Future Hours per Year: 8,760
- 3) This emissions summary was developed solely for the purpose of evaluating the PSD and NSR applicability of the proposed NAAQS Control Measures Project. The emission data presented was not developed in a manner suitable for use in any way to demonstrate attainment of the Pb NAAQS, and is not intended for any such use. Exide has separately prepared and submitted to PADEP an air quality dispersion modeling report for the purpose of demonstrating attainment of the Pb NAAQS.

Indicates revised value due to baseline emissions adjustment.

Revised: 6/7/2012

Attachment 4  
Table 3-4 Revised  
Summary of Project-Related Emissions and NNSR Applicability for  
NAAQS Control Measures Project  
Exide Technologies - Reading, Pennsylvania  
(tons/yr)

Source	PM <sub>2.5</sub>	NO <sub>x</sub>	VOC	Pb
Smelter Ventilation #1	-1.39	0.00	0.00	-0.0490
Smelter Ventilation #2	-0.64	0.00	0.00	-0.0243
Smelter Building Ventilation	-1.47	0.00	0.00	-0.0083
Raw Material Storage	-3.51	0.00	0.00	-0.1641
Refining Kettles	-0.02	1.92	0.08	-0.0003
<b>NNSR Applicability Step 1: Total Project Emissions Increases</b>	<b>0.00</b>	<b>1.92</b>	<b>0.08</b>	<b>0.00</b>
<b>NNSR Significance Levels</b>	<b>10</b>	<b>40</b>	<b>100</b>	<b>0.6</b>
<b>Project Increases Exceed NNSR Significance Levels?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

Notes:

- 1) NSR Significance Levels as listed in 40 CFR §52.21(b)(23)(1) and 25 Pa. Code §121.1.
- 2) Projected actual emissions increases based upon the following future hours of operation and anticipated incremental increases:  
Future Hours per Year 8,760
- 3) This emissions summary was developed solely for the purpose of evaluating the PSD and NNSR applicability of the proposed NAAQS Control Measures Project. The emission data presented was not developed in a manner suitable for use in any way to demonstrate attainment of the Pb NAAQS, and is not intended for any such use. Exide has separately prepared and submitted to PADEP an air quality dispersion modeling report for the purpose of demonstrating attainment of the Pb NAAQS.

Indicates revised value due to  
baseline emissions adjustment.

Revised: 6/7/2012

## Hanlon, Thomas

**From:** DAUB, Robin (Reading) <robin.daub@na.exide.com>  
**Sent:** Tuesday, May 01, 2012 5:03 PM  
**To:** Hanlon, Thomas  
**Cc:** MILLER, James (Reading); GANSTER, Fred (Reading Equipment Center); HENKE, Daniel (Muncie); Collings, Robert; PEHOTE, Harry (Reading)  
**Subject:** Follow up to phone message

Tom:

In response to your email of April 30<sup>th</sup> Exide provides the following information;

1. You requested the outlet Pb concentrations for the 3 existing and 3 new baghouses to verify the modeled emission rates that will be included as new permit conditions. The table below lists these modeled Pb emission concentrations. We have also included the current Pb emission concentration limits for the existing baghouses for comparison.

Baghouse		Stack ID	Current Limits Pb (gr/dscf)	Modeled Pb Concentrations (gr/dscf)
C19 Baghouse: Slag Area	Existing	S19	0.00087	0.000032
C23A Baghouse 2: Raw Material Storage Area	Existing	S23A	0.00044	0.000026
C47 Baghouse: Refining Kettles	Existing	S47	0.00087	0.000056
C62 Baghouse w/HEPA: Smelter System Ventilation	New	S62	n/a	0.000041
C63 Baghouse w/HEPA: General Ventilation West	New	S63	n/a	0.000041
C64 Baghouse w/HEPA: General Ventilation East	New	S64	n/a	0.000041

2. You also requested information on the control performance characteristics of the C19 baghouse following the proposed reconfiguration to address Best Available Technology (BAT) concerns. 25 Pa. Code 127.12(a)(5) requires that plan approval applications show that emissions from new sources are the minimum attainable through the use of BAT. However, it is our position that the proposed reconfiguration of sources controlled by C19 does not constitute a "new source" and therefore BAT provisions do not apply. Nevertheless, we point out that, after the reconfiguration, the existing Slag Area sources controlled by the C19 fabric filter technology will have previously been controlled by the C29 and C46 baghouses that employ the same fabric filter technology. It is therefore clear that the previously employed BAT and its control efficiency will be maintained.

*Robin S. Daub*

EHS Manager  
Exide Technologies  
Reading Recycling  
Spring Valley Road & Nolan Ave.  
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**From:** Hanlon, Thomas [mailto:thanlon@pa.gov]  
**Sent:** Monday, April 30, 2012 4:17 PM  
**To:** DAUB, Robin (Reading)  
**Subject:** Follow up to phone message

Hi Robin,

As I stated in my phone message, I will be in a staff meeting tomorrow morning, but will be in the afternoon. If you could, please provide the maximum outlet lead concentrations for the 3 existing and 3 new baghouses just so I verify I was using the correct number is the modeling emission estimates, and so that I can include them as permit conditions. Also can you verify that the outlet particulate and lead concentration won't increase nor the efficiency decrease for C19 as part of the reconfiguration of sources to that baghouse. I was instructed to include a statement to that effect in the review memo to address BAT concerns.

Thanks,

Tom

Thomas J. Hanlon, P.E. | Environmental Engineering Manager  
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Hanlon, Thomas

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**From:** DAUB, Robin (Reading) <robin.daub@na.exide.com>  
**Sent:** Wednesday, April 18, 2012 3:49 PM  
**To:** Hanlon, Thomas  
**Cc:** GANSTER, Fred (Reading Equipment Center); Collings, Robert; GRAESSLE, Christine (Atlanta); MILLER, James (Reading)  
**Subject:** FW: Plan Approval Questions

Tom,

Sorry for the phone tag over the last several days; so the response to your questions are as follows:

Condition #002a should not be a problem since we are not proposing to increase the actual throughput of the refinery.

Condition #002b should be removed. It applies to the American Air Filter Baghouse, which will be removed as part of the project.

Condition #003a originally applied to the process fugitive emissions from the #2 furnace systems (lead/slag taps, charging areas, etc.). With the reconfiguration, it will control the slag crusher, slag storage, and general ventilation and have less of a lead loading. Although the condition is probably still achievable, I don't believe the condition will be applicable anymore.

Condition #003b should be removed. It applies to the American Air Filter Baghouse, which will be removed as part of the project.

Do not hesitate to call me with any further questions.

Thanks,

*Robin S. Daub*

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**From:** Hanlon, Thomas [<mailto:thanlon@pa.gov>]  
**Sent:** Thursday, April 12, 2012 3:13 PM  
**To:** DAUB, Robin (Reading)  
**Subject:** Plan Approval Questions

Hi Robin,



How are you doing?

With the reconfigurations and such being proposed as part of the plan approval, do you feel Conditions 002 and 003 of Source Group SG02 from the current title V permit are still applicable and achievable?

Thanks,

tom

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## Hanlon, Thomas

From: Russell Kemp <rkemp@environcorp.com>  
Sent: Thursday, April 05, 2012 1:24 PM  
To: Hanlon, Thomas  
Cc: GANSTER, Fred (Reading Equipment Center); DAUB, Robin (Reading); Mike Thomson  
Subject: FW: Modeling  
Attachments: Exide Lead Testing Results S47 and S55.pdf; FW Yuasa Plan Approval; FW Yuasa

Good afternoon Tom,

We have included your original questions and provided responses below each one. The response to question three is fairly long, because of the additional information provided with respect to the Yuasa sources. Please feel free to contact us to discuss the information provided. Given the holiday weekend and Spring Break down south, it may be difficult to reach us until Monday, however.

1. Supporting calculations for S47 emission rate listed on Table 1

- a. Page 2 of the source testing reports attached provides stack testing data for S47 where the average concentration of lead measured was 0.000037 gr/dscf corresponding to an emission rate of 0.0093 lb/hr. This value was used with a 1.5 times multiplier to model S47 with a maximum emission rate of:

$$S47 \text{ Modeled emission Rate} = \frac{0.0093 \text{ lb}}{\text{hr}} \left( \frac{453.6 \text{ grams}}{\text{lb}} \right) \left( \frac{\text{hr}}{3600 \text{ sec}} \right) (1.5) = 0.001785 \text{ g/s}$$

- b. Following discussions with All4, it was determined that the emission rate was modeled as intended and that the Plan Approval Application emission rate for this source would need to be amended to 0.000056 gr/dscf. All4 proposed to include the revision to the emission rate with their response to any other comments on the Plan Approval Application from the PADEP in a memorandum.

2. The assumptions used for S55 and S70

- a. Page 1 of the source testing report attached provides stack testing data for S55 where the average concentration of lead measured was 0.000044 gr/dscf corresponding to an emission rate of 0.0266 lb/hr. This value along with a 1.5 times multiplier was used to model the maximum emission rate from S55:

$$S55 \text{ Modeled emission Rate} = \frac{0.0266 \text{ lb}}{\text{hr}} \left( \frac{453.6 \text{ grams}}{\text{lb}} \right) \left( \frac{\text{hr}}{3600 \text{ sec}} \right) (1.5) = 0.005027 \text{ g/s}$$

- b. Although ENVIRON does not currently have access to a copy of the source testing report, the emission rate for S70 is based upon a stack test completed in July 1998 for S70 where the average lead emission rate was measured to be 0.0003 lb/hr. The modeled emission rate was calculated by converting to g/s and using a 4.2 times multiplier for a maximum emission rate of:

$$S70 \text{ Modeled emission Rate} = \frac{0.0003 \text{ lb}}{\text{hr}} \left( \frac{453.6 \text{ grams}}{\text{lb}} \right) \left( \frac{\text{hr}}{3600 \text{ sec}} \right) (4.2) = 0.000159 \text{ g/s}$$

3. The assumptions used and supporting calculations for Yuasa S01, S03(1-3) and S05.

Table 1 provided here is meant to serve as a proposed revision to the Yuasa point sources presented Table 1 in our Air Quality Dispersion Modeling Report (AQMR) based upon the information provided via email on February 24th, and March 20th 2012.

Table 1: Proposed Yuasa Lead emitting point sources to be included in revised Dispersion Modeling Analysis

AERMOD Source Group ID <sup>1</sup>	Source Description <sup>1</sup>	Easting (meters) <sup>2</sup>	Northing (meters) <sup>2</sup>	Elevation (meters) <sup>3</sup>	Lead Emission Rate (gram / second)	Stack Height (meters)	St Te (K)
-------------------------------------	---------------------------------	-------------------------------	--------------------------------	---------------------------------	------------------------------------	-----------------------	-----------

Y_S01 <sup>c</sup>	(Yuasa) Pasting Operation	422803	4470625	112.52	0.000472	10.668
Y_S02 <sup>d</sup>	(Yuasa) Oxide Bin	422805	4470606	112.46	0.000239	17.374
Y_S03_1 <sup>e</sup>	(Yuasa) Assembly Lines 1 & 2 Bag House	422808	4470578	112.49	0.000539	6.096
Y_S03_2 <sup>e</sup>	(Yuasa) Battery Assembly	422808	4470578	112.49	0.000270	6.096
Y_S03_3 <sup>e</sup>	(Yuasa) Battery Assembly	422808	4470578	112.49	0.000270	6.096
Y_S05 <sup>f</sup>	(Yuasa) Grid Casting Collector	422804	4470635	112.55	0.000460	7.62
Y_SXX <sup>g</sup>	New Lead Oxide Ball Mill			111.25	0.000164	
Y_SYY <sup>h</sup>	Four New Lead Oxide Silos				0.000478	

Notes:

<sup>1</sup> Some of the Existing Source IDs, and descriptions have been modified compared to the protocol in order to match proposed application submission

<sup>2</sup> Easting and Northing coordinates for Point Sources are in UTM Zone 18, NAD83 Datum

<sup>3</sup> Elevation is assigned by AERMAP (Version 11103)

- a. Emission rates proposed for modeling that are based upon stack testing and / or actual emission rates include a multiplier of 1.25
- b. Emission rates proposed for modeling that are based upon reported potential to emit do not include a multiplier (i.e. multiplier = 1)
- c. Emission rate for Y\_S01 was calculated in two ways:

- i. Based upon the 2010 facility AIMS submission 0.0164 TPY estimated based upon "B Rated Factor" and assumed to represent a conservative estimate of annual emissions. (Potential Emission Rate #2 was reported in Table 1 of the AQMR)

$$\begin{aligned}
 &Y_{S01} \text{ Potential emission Rate \#1} \\
 &= \frac{0.0164 \text{ ton}}{\text{yr}} \left( \frac{2000 \text{ lb}}{\text{ton}} \right) \left( \frac{\text{yr}}{8760 \text{ hr}} \right) \left( \frac{453.6 \text{ grams}}{\text{lb}} \right) \left( \frac{\text{hr}}{3600 \text{ sec}} \right) (1) \\
 &= 0.000472 \text{ g/s}
 \end{aligned}$$

- ii. Based upon the 2009 facility AIMS submission 0.010 TPY from stack testing

$$\begin{aligned}
 &Y_{S01} \text{ Potential emission Rate \#2} \\
 &= \frac{0.010 \text{ ton}}{\text{yr}} \left( \frac{2000 \text{ lb}}{\text{ton}} \right) \left( \frac{\text{yr}}{8760 \text{ hr}} \right) \left( \frac{453.6 \text{ grams}}{\text{lb}} \right) \left( \frac{\text{hr}}{3600 \text{ sec}} \right) (1.25) \\
 &= 0.000360 \text{ g/s}
 \end{aligned}$$

Although Y\_S01 Potential Emission Rate #1 is based upon lower quality of data, the information is more recent and conservative, and it is therefore recommended that the modeled emission rate be revised to 0.000472 g/s.

- d. The emission rate for Y\_S02 is recommended to be revised to the potential to emit 0.0083 TPY lead oxide reported in the Letter Dated Sept. 29 2011 regarding Yuasa Battery Plan Approval.

$$\begin{aligned}
 Y_{S02} \text{ emission Rate} &= \frac{0.0083 \text{ ton}}{\text{yr}} \left( \frac{2000 \text{ lb}}{\text{ton}} \right) \left( \frac{\text{yr}}{8760 \text{ hr}} \right) \left( \frac{453.6 \text{ grams}}{\text{lb}} \right) \left( \frac{\text{hr}}{3600 \text{ sec}} \right) (1) \\
 &= 0.000239 \text{ g/s}
 \end{aligned}$$

Note that, this emission rate is much lower than the 0.06 TPY reported in the 2009 and 2010 AIMS reports which rely on material balance calculations, and formed the original basis for the emission rate presented in Table 1 of the AQMR.

- e. The emission rate for Y\_S03 as it was reported in Table 1 of the AQMR, and is proposed here is based upon emission of 0.03 TPY lead reported in the 2010 facility AIMS report, which references stack testing for this source. The total emission rate is broken into three modeled sources based upon the sources described in the 2009 PADEP model files provided to Exide. It is our understanding that Y\_S03\_1

represents emissions from Battery Assembly Lines #1 and #2, Y\_S03\_2 represents Battery Assembly Line #3, and Y\_S03\_3 represents emissions from Battery Assembly Line #4:

$$\begin{aligned} & Y_{S03\_1} \text{ emission Rate} \\ &= \frac{0.03 \text{ ton}}{\text{yr}} \left( \frac{2000 \text{ lb}}{\text{ton}} \right) \left( \frac{\text{yr}}{8760 \text{ hr}} \right) \left( \frac{453.6 \text{ grams}}{\text{lb}} \right) \left( \frac{\text{hr}}{3600 \text{ sec}} \right) \left( \frac{2 \text{ Assembly Lines}}{4 \text{ Total Assembly Lines}} \right) (1.25) \\ &= 0.000539 \text{ g/s} \end{aligned}$$

$$\begin{aligned} & Y_{S03\_2} \text{ emission Rate} \\ &= \frac{0.03 \text{ ton}}{\text{yr}} \left( \frac{2000 \text{ lb}}{\text{ton}} \right) \left( \frac{\text{yr}}{8760 \text{ hr}} \right) \left( \frac{453.6 \text{ grams}}{\text{lb}} \right) \left( \frac{\text{hr}}{3600 \text{ sec}} \right) \left( \frac{1 \text{ Assembly Line}}{4 \text{ Total Assembly Lines}} \right) (1.25) \\ &= 0.000270 \text{ g/s} \end{aligned}$$

$$\begin{aligned} & Y_{S03\_3} \text{ emission Rate} \\ &= \frac{0.03 \text{ ton}}{\text{yr}} \left( \frac{2000 \text{ lb}}{\text{ton}} \right) \left( \frac{\text{yr}}{8760 \text{ hr}} \right) \left( \frac{453.6 \text{ grams}}{\text{lb}} \right) \left( \frac{\text{hr}}{3600 \text{ sec}} \right) \left( \frac{1 \text{ Assembly Line}}{4 \text{ Total Assembly Lines}} \right) (1.25) \\ &= 0.000270 \text{ g/s} \end{aligned}$$

- f. The emission rate for Y\_S05 is proposed to be revised to the potential to emit 0.016 TPY lead oxide based upon Letter Dated Sept. 29 2011 regarding Yuasa Battery Plan Approval.

$$\begin{aligned} Y_{S05} \text{ emission Rate} &= \frac{0.016 \text{ ton}}{\text{yr}} \left( \frac{2000 \text{ lb}}{\text{ton}} \right) \left( \frac{\text{yr}}{8760 \text{ hr}} \right) \left( \frac{453.6 \text{ grams}}{\text{lb}} \right) \left( \frac{\text{hr}}{3600 \text{ sec}} \right) (1) \\ &= 0.000460 \text{ g/s} \end{aligned}$$

The emission rate presented in Table 1 of the AQMR was based upon a stack tested emission rate from 1995 of 0.013 TPY, and a 1.25 times multiplier for an emission rate of 0.000467 g/s.

- g. Source Y\_SXX is proposed to be added to represent emissions from a new ball mill with potential to emit 0.0057 TPY lead oxide reported in the Letter Dated Sept. 29 2011 regarding Yuasa Battery Plan Approval. The letter also reports that emissions from this source would be controlled by a baghouse followed by a HEPA filter. Sections of the Plan Approval Application sent via email on March 20, 2012, included additional source characteristics such as the design flow rate (7100 acfm), stack diameter (0.83 ft), temperature (176 °F), and the estimated emission rate.

The emission rate is reported in Section F of the Plan Approval Application to be based upon an engineering calculation, and is proposed to have an allowable limit of 0.055 TPY or 0.0126 lb/hr, which represents an order of magnitude increase over the letter dated Sept 29, 2011. Section C of the Plan Approval Application reports the expected outlet concentration of the HEPA filter to be <0.05 mg/m<sup>3</sup>, which when combined with the expected flow rate agrees most closely with the estimate reported in the letter dated Sept. 29, 2011. The emission rate in the letter is therefore assumed to be the emission rate estimate intended to the maximum emission potential, and is the emission rate proposed for modeling.

$$\begin{aligned} Y_{SXX} \text{ emission Rate} &= \frac{0.0057 \text{ ton}}{\text{yr}} \left( \frac{2000 \text{ lb}}{\text{ton}} \right) \left( \frac{\text{yr}}{8760 \text{ hr}} \right) \left( \frac{453.6 \text{ grams}}{\text{lb}} \right) \left( \frac{\text{hr}}{3600 \text{ sec}} \right) (1) \\ &= 0.000164 \text{ g/s} \end{aligned}$$

We did not find a stack height, or location of this source in the documents provided, which are both required for modeling.

- h. Source Y\_SYY is proposed to represent the emissions from four lead oxide silos with emissions controlled by bin vent filters followed by a HEPA filter as described in the Letter Dated Sept. 29 2011 regarding Yuasa Battery Plan Approval. The most recent emission rate revision was provided in an addendum memo on December 2, 2011 as 0.0166 TPY of lead.

$$\begin{aligned} Y_{SYY} \text{ emission Rate} &= \frac{0.0166 \text{ ton}}{\text{yr}} \left( \frac{2000 \text{ lb}}{\text{ton}} \right) \left( \frac{\text{yr}}{8760 \text{ hr}} \right) \left( \frac{453.6 \text{ grams}}{\text{lb}} \right) \left( \frac{\text{hr}}{3600 \text{ sec}} \right) (1) \\ &= 0.000478 \text{ g/s} \end{aligned}$$

The addendum memo (Dec. 2, 2011) reports that this source would exhaust inside a building. The location of the building and how air is exhausted is unclear. Additional information with respect to the location of this source, and configuration of the exhaust to atmosphere would be required in order to determine source parameters to be incorporated into the dispersion model.

Kind regards,  
Russell Kemp and Mike Thompson  
ENVIRON

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**From:** DAUB, Robin (Reading) [<mailto:robin.daub@na.exide.com>]  
**Sent:** Friday, February 17, 2012 12:43 PM  
**To:** Mike Thomson  
**Subject:** FW: Modeling

Reading modeling questions from DEP.

*Robin S. Daub*  
phone: 610-921-4170  
cell: 484-358-7025

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**From:** Hanlon, Thomas [<mailto:thanlon@pa.gov>]  
**Sent:** Friday, February 17, 2012 12:13 PM  
**To:** DAUB, Robin (Reading)  
**Subject:** Modeling

Hi Robin,

If you get chance to talk to the modeling people, the following are what I would like to see:

4. Supporting calculations for S47 emission rate listed on Table 1
5. The assumptions used for S55 and S70
6. The assumptions used and supporting calculations for Yuasa S01, S03(1-3) and S05.

I am having difficulty reproducing the values for these sources which I need to do to be able to tell Central Office modeling staff that the emission rates used are acceptable.

I am leaving at 12:45 today and will be back in the office on Tuesday.

Thanks,

Tom

Thomas J. Hanlon, P.E. | Environmental Engineering Manager  
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909 Elmerton Avenue | Harrisburg, PA 17110  
Phone: 717.705.4862 | Fax: 717.705.4830

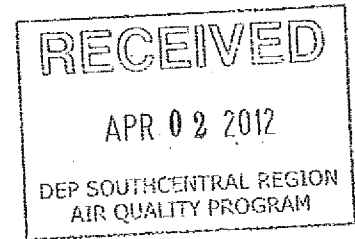
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March 30, 2012

Mr. William Weaver  
Air Quality Program Manager  
Pennsylvania Department of Environmental Protection  
909 Elmerton Avenue  
Harrisburg, PA 17110-8200

**RE: Exide Technologies Reading, PA Facility  
Response to Comments of the Berks County Commissioners on  
NAAQS Control Measures Plan Approval Application and  
AQMR for Pb SIP Attainment Demonstration**

Dear Mr. Weaver:

The Exide Technologies Reading, PA Facility (Exide) is pleased to provide this response to comments received by the Pennsylvania Department of Environmental Protection (PADEP) regarding the National Ambient Air Quality Standards (NAAQS) Control Measures Plan Approval Application (PAA) and the Air Quality Dispersion Modeling Report (AQMR) for Lead (Pb) SIP Attainment Demonstration, both of which were submitted to PADEP on January 18, 2012. The comment submittals Exide addresses herein include the following:

- Comments on the NAAQS Control Measures PAA submitted by Fred P. Osman, an environmental consultant, on behalf of the Berks County Commissioners (BCC), in a letter to PADEP's William Weaver dated February 21, 2012.
- Comments on the AQMR for Pb SIP Attainment Demonstration submitted by Mr. Osman on behalf of the BCC, in a letter to PADEP's William Weaver dated March 5, 2012.

The comments submitted are summarized below followed by Exide's responses.

**BCC's Consultant's Comments on the NAAQS Control Measures PAA, February 21, 2012**

**PAA Comment #1. Because of known lead pollution and predicted SO<sub>2</sub> pollution, DEP may not issue a plan approval for this source; an order is required.**

The BCC consultant asserts that, pursuant to 25 Pa. Code §127.13b(a)(1), PADEP may not grant a Plan Approval to a facility causing air pollution and that PADEP has already determined that Exide is causing Pb air pollution. Though not clearly stated in these

comments, Exide assumes that the BCC reference to a Pb pollution finding by PADEP relates to current monitoring data that indicates levels in the vicinity of Exide that exceed the revised NAAQS for Pb, which was promulgated by the U.S. Environmental Protection Agency (EPA) in November of 2008. Additionally, the BCC claim to have demonstrated that the Exide facility has the potential to cause sulfur dioxide (SO<sub>2</sub>) levels that exceed the new 1-hour SO<sub>2</sub> NAAQS which U.S. EPA promulgated in June 2010, and that this also somehow represents pollution that prevents PADEP from issuing a Plan Approval to Exide.

The Clean Air Act (CAA) provides that PADEP determine areas that are not attaining any newly promulgated NAAQS, develop control measures that will bring any such areas into attainment, promulgate regulations and/or issue orders that require emission reductions and then, within three (3) years after promulgation of the newly promulgated NAAQS, submit a plan of control measures to U.S. EPA (as a revision to the State Implementation Plan [SIP]) that will be implemented to bring any areas that are designated as nonattainment into attainment. All of these tasks are subject to U.S. EPA approval.

The existence of monitoring data showing ambient Pb levels in the vicinity of Exide that exceed the 2008 Pb NAAQS is not disputed. However, rather than representing pollution that prevents issuing a Plan Approval, this data forms the determination that the area is not currently attaining the 2008 Pb NAAQS, thereby triggering the rest of the process required by the CAA described above. The NAAQS Control Measures PAA and the AQMR for Pb SIP Attainment Demonstration submitted by Exide were the next necessary steps in that process, and Exide's preparation and submittal of these documents represents Exide's participation with PADEP in the process to develop the SIP.

The AQMR for Pb SIP Attainment Demonstration demonstrates that proposed modifications and the addition of air cleaning devices at Exide would result in attainment of the 2008 Pb NAAQS. However, pursuant to 25 Pa. Code §127.11, Exide cannot proceed with construction of the proposed modifications and installation of air cleaning devices unless the modifications and installations are approved by PADEP by Plan Approval. Thus, Exide submitted the NAAQS Control Measures PAA to PADEP in order to obtain approval to proceed expeditiously with implementation of the control measures. Exide does not assume that receipt of a Plan Approval is the final step in the 2008 Pb NAAQS attainment process. Exide recognizes that future steps in the process may include a consent order and agreement between PADEP and Exide that will serve as an enforceable mechanism to assure that proposed control measures are implemented.

At this time the attainment designations for the new 1-hr SO<sub>2</sub> NAAQS have not yet been issued by U.S. EPA and, thus, the SO<sub>2</sub> attainment status of the area around Exide remains as unclassifiable. Until such time as the CAA process described above unfolds in the future and U.S. EPA changes the SO<sub>2</sub> attainment status to attainment or nonattainment based on criteria established by U.S. EPA, the area will remain unclassifiable for SO<sub>2</sub>. Therefore, there are no additional requirements for Exide arising under the new 1-hour



SO<sub>2</sub> NAAQS that prevent PADEP from issuing a Plan Approval intended to achieve attainment of the Pb NAAQS.

The BCC consultant begins his comments by stating full support of all the measures proposed in the NAAQS Control Measures PAA and encouraging Exide to proceed to take these measures as rapidly as possible. Given that statement, Exide is puzzled as to why the BCC consultant then takes an unfounded contradictory position that can only obstruct the issuance of the Plan Approval, the very action Exide needs to proceed with implementation of the control measures that the BCC claim to support. There would be much to lose in the way of progress toward attainment of the 2008 NAAQS in the Laureldale area if this comment is given any consideration. Exide urges PADEP to disregard these comments, follow the appropriate regulatory process, and issue the requested Plan Approval as quickly as possible in advance of any consent order or other subsequent step in the 2008 Pb NAAQS attainment process.

***PAA Comment #2. The point source lead emissions from all sources combined must be reduced from those previously emitted by the source.***

The BCC consultant raises as a "point of interest" that a comparison of previously tested emissions to Exide's Attainment Model, as presented in a table on page 2 of their February 21, 2012 letter, indicates an increase in point source (stack) emissions of 27%. The BCC go on to say that, while they know it is "admittedly simplistic" to draw their conclusions, it is "beyond curious" that the increase in total emissions they allege would result in a decrease in ambient impact, and that these results "defy common sense," making it "difficult to imagine how the NAAQS will be attained."

The comment's comparison of emission rates is not merely "admittedly simplistic," but is both misleading and irrelevant. The table presented in the comment, by its own title and definition, compares previously measured (i.e., actual) emission rates with those in the Attainment Model. The comment admits that the reconfiguration of control devices and emission points in Exide's proposal makes comparison "a bit complicated." This is an enormous understatement, since any attempt to do so results only in an apples-to-oranges comparison because the Attainment Model emission rates are intended to serve as an indication of future allowed maximum emission rates, not actual emission rates. Such future allowable point source emission rates would, of course, be generally greater than actual emission rates experienced in testing to allow for variability and a reasonable expectation of compliance. Thus, pointing out that the sums of these two disparate columns in the table differ by 27% misleadingly implies that stack emissions will actually increase by that amount.

Secondly, whether or not there is a small future increase in actual stack emission rates is irrelevant. The BCC incorrectly assert that the NAAQS Control Measures should be designed to reduce point source emissions, when in fact the reduction of point source emissions is not the goal of the proposed project. Exide's proposed NAAQS Control Measures are designed to achieve the true goal, which is a reduction in ambient Pb concentrations. This does not mean that specific source emission reductions are not expected. As is made clear in the NAAQS Control Measures PAA, Exide will totally

enclose existing and potential sources of fugitive Pb dust emissions by the addition of new building enclosure structures and the addition and reconfiguration of ventilation and emission controls. The overall facility enclosure design includes several relatively large ventilation systems for the purpose of maintaining the enclosures that house facility operations under negative pressure conditions at all times. Even with the planned emission controls on these new ventilation systems, those exhausts will, of course, have some level of Pb emissions. However, the proposed NAAQS Control Measures result in any such emissions being exhausted from elevated point source stacks with better dispersion and less ambient impact, as demonstrated in the AQMR for Pb SIP Attainment Demonstration. Thus, as designed, the proposed NAAQS Control Measures will provide for a definite improvement in the ambient Pb concentrations around the facility regardless of how the individual stacks involved compare, and this is the clear goal of the entire effort.

It is not at all "beyond curious" to conclude that the proposed NAAQS Control Measures will result in a substantial decrease in ambient impacts. Instead, such an outcome is exactly what would be expected. Exide has submitted comprehensive dispersion modeling which demonstrates that the impacts from these sources, at their future proposed allowable emission rates, achieve compliance with the 2008 Pb NAAQS. The results of that modeling are not a surprise and in no way "defy common sense," since the NAAQS Control Measures proposed by Exide are consistent with the final amendments to the National Emission Standards for Hazardous Air Pollutants (NESHAP) from Secondary Pb Smelting issued by U.S. EPA at 77 Fed. Reg. 556 (January 5, 2012). U.S. EPA issued these amendments to 40 CFR 63 Subpart X following a recent risk and technology review of secondary Pb smelting sources. In issuing these rule amendments U.S. EPA concluded that full enclosure of operations within buildings with air inflow vented to control devices, along with implementation of comprehensive work practices, is the current Maximum Achievable Control Technology (MACT) to address risks due to Pb emissions from sources such as Exide's lead recycling facilities. U.S. EPA concluded that control measures consistent with the Subpart X amendments will result in improvements in ambient Pb concentrations and, specifically stated that "... this rule should result in areas attaining the lead NAAQS where the secondary lead smelting source dominates the areas' ambient lead concentrations..." (77 Fed. Reg. 577, January 5, 2012). Exide could not agree more, as evidenced by the NAAQS Control Measures that Exide has proposed.

There is, therefore, no reason why Exide must commit to lowering point source emissions as the BCC assert. The BCC demand in this regard has no basis in the relevant regulations and no foundation analytically. One cannot accomplish the enhanced collection of fugitive emissions (which the BCC state they support) without adding stack sources associated with the ventilation and control systems accomplishing the MACT. The AQMR for Pb SIP Attainment Demonstration submitted by Exide demonstrates that emissions from these stacks will not result in ambient impacts above the 2008 Pb NAAQS. It is therefore absolutely *not* "difficult to imagine how the NAAQS will be attained" in this instance, though imagination is not required or appropriate here. Exide

prefers to instead rely on technical analysis, and urges PADEP to do the same in promptly issuing the requested Plan Approval.

The comments also focus on the main smelter stack which is, again, irrelevant. The BCC point out that the main smelter stack represents "nearly 9%" of the facility point source emissions. While this may be stating a fact, it is a fact that has no bearing on the goal of reducing ambient Pb concentrations. Even if it was relevant, it is not at all out of line to have emissions from a single stack mathematically representing 9% of a facility's overall emissions when the facility has nine (9) stacks emitting lead from control devices. One ninth of the facility's stack emissions would be 11%, so Exide's main stack is actually slightly less than "par" if following the BCC logic. This clearly indicates the irrelevance of the comment. As we have pointed out above, the issue is not how much an individual stack emits, but rather how emissions from all stacks combined impact ambient concentrations, and that aspect has been evaluated through dispersion modeling, which is U.S. EPA's and PADEP's recognized and proper tool.

Furthermore, stacks are surely not evaluated on the basis of which ones have "the most visible emissions." BCC's consultant clearly understands the principles of visible emissions well enough to avoid this misleading statement. Exide's main smelter stack can have a visible white plume on occasion due to the condensation of water vapor under certain atmospheric conditions. Actually, the condensing water vapor that forms this plume results largely from residual moisture from wet scrubber air pollution control devices that Exide employs to control emissions of SO<sub>2</sub>. As is clearly established at 25 Pa. Code § 123.42(1), a visible plume is not relevant when the presence of uncombined water is the only reason for the visible emissions, which is the case with the main smelter stack at Exide. To single out the main smelter stack for attention in this Pb NAAQS attainment effort because it has a visible plume of harmless water vapor is simply ludicrous.

As detailed in the Exide responses above, increases in stack emissions can be justified and, indeed, have been justified by the dispersion modeling submitted to PADEP. In the aggregate sense at the facility, overall stack emissions may increase due to the addition of stacks serving critical, new ventilation systems to improve fugitive emission capture and control, which is central to the ambient attainment strategy. But, in general, existing stacks will see their allowable emission rates reduced. That is, the emission rates used in the attainment dispersion modeling for existing stack sources are less than the emission rates that would be allowed under 40 CFR 63 Subpart X for this industry and lower than the currently allowed emission rates in Exide's Title V Operating Permit (TVOP).

**PAA Comment #3.** *DEP must address SO<sub>2</sub> pollution in any action undertaken by the Department relative to this source.*

As stated in response to PAA Comment #1 above, there are no issues related to the new 1-hour SO<sub>2</sub> NAAQS that apply to the proposed NAAQS Control Measures and PADEP's issuance of a Plan Approval for their implementation.

Certain emission units that are exhausted through the main smelter stack are sources of SO<sub>2</sub> emissions which are controlled and regulated by existing provisions in Exide's Title V Operating Permit No. 06-05066 (TVOP). As the BCC comments acknowledge, Exide is not proposing any modification or new controls for these emission units. As such, the sources, controls and emissions associated with the main smelter stack are not subject to any action PADEP takes in response to the NAAQS Control Measures PAA, including any requirements to address SO<sub>2</sub> emissions.

The NAAQS Control Measures PAA proposes a reconfiguration of the Refining Kettles emission unit. The combustion of natural gas by the Refining Kettle indirect heating burners results in some emissions of sulfur oxides, including SO<sub>2</sub>. Exide addresses these SO<sub>2</sub> emissions in the NAAQS Control Measures PAA narrative sections 2.3.7.1 (Project Description), 3.2.1.5 and 3.2.2.5 (Emission Inventory), 4.2.3 and 4.2.5 (Applicable Requirements) and on page 83 of Appendix B (Process Forms). Exide expects that PADEP will appropriately address any requirements applicable to these SO<sub>2</sub> emissions when issuing the Plan Approval. Exide's review indicates that there are no applicable requirements beyond the current TVOP requirements.

***PAA Comment #4. Other HAPs (notably arsenic and cadmium) must be addressed in any action undertaken by DEP; at least they must be quantified.***

The BCC consultant's comments assert that U.S. EPA has established through 40 CFR 63 Subpart X that secondary Pb smelters emit arsenic and cadmium as well as Pb and that, for this reason, Exide must quantify these as regulated pollutants in the NAAQS Control Measures PAA. The BCC then suggest that arsenic and cadmium emissions are the reason why Exide does not propose to modify the main smelter control and states that, had Exide done so, the BCC would then be asking for an estimate of dioxin/furan emissions.

In discussing the risk assessment performed as part of the rulemaking that amended 40 CFR 63 Subpart X, U.S. EPA concludes that the determined risks to public health from secondary Pb smelting emissions are primarily driven by risk from exposure to air-borne Pb emissions, but also considers other risk metrics associated with stack emissions of non-Pb hazardous air pollutants (HAP) such as arsenic and cadmium (77 Fed. Reg. 563, January 5, 2012). However, U.S. EPA chose not to establish limits for arsenic in the Subpart X regulations. Rather, U.S. EPA's analysis for setting allowable stack emissions concluded that, because the controls for stack emissions of arsenic are the same as those for Pb, and because the relationship between emissions and risk and ambient air Pb concentrations are predominately linear, an appropriate reduction in the stack Pb concentration limit ensures acceptable risk from MACT-allowable emissions of both Pb and arsenic (76 Fed. Reg. 29055, May 19, 2011). The same conclusions apply to all non-Pb metal HAP, including cadmium.

All of the measures that are being proposed as part of the NAAQS Control Measures are designed to meet the amended requirements of 40 CFR Part 63, Subpart X, and the sources at Exide will comply with the amended requirements no later than the applicable compliance date. Therefore, compliance with the stack Pb concentration limits in

Subpart X provides adequate protection from risk associated with emissions of arsenic and cadmium.

The suggestion that a requirement to quantify arsenic, cadmium and dioxin/furan emissions is the reason why Exide has not proposed to modify the main stack cannot be viewed as anything other than yet another attempt to mislead PADEP and the public. The AQMR for Pb SIP Attainment Demonstration clearly demonstrates that when Exide's proposed NAAQS Control Measures are implemented, modifications to the main stack are not necessary to achieve the goal. The comment does not identify any requirement for main stack modifications as a part of this process. Exide urges PADEP to disregard these comments entirely and promptly issue the requested Plan Approval.

**PAA Comment #5.** *DEP must ensure properly located lead samplers adequate to accurately monitor NAAQS compliance in the Laureldale area.*

Citing Berks County's previous review of Exide's TVOP and assertion that there is insufficient monitoring of Pb NAAQS compliance, the BCC raise the same issue regarding the NAAQS Control Measures PAA as a reason barring PADEP from issuing a Plan Approval. The BCC claims that there should be additional Pb NAAQS compliance monitors sited and operated in the vicinity of Exide and that PADEP has the authority to require Exide to maintain these additional monitors.

The issue raised by this comment is a reflection of the BCC's prior attempts to challenge PADEP's Pb NAAQS monitoring program. However, this issue has no place here, since a Plan Approval sought by an individual source is clearly not an appropriate vehicle for the commenter to challenge PADEP's NAAQS monitoring program outside of the SIP review process.

PADEP has previously responded to comments regarding its monitor location by noting that the monitor is at the location of the modeled maximum running three month concentration, which is what the Pb NAAQS monitoring rules require. Exide agrees with PADEP that the monitoring system established following U.S. EPA requirements and guidance is adequate for monitoring compliance, and no additional monitoring is necessary or required.

**PAA Comment #6.** *DEP must confirm that the Exide controls will lead to NAAQS compliance.*

As stated in response to PAA Comment #2 above, Exide has submitted comprehensive dispersion modeling which demonstrates that implementation of the measures proposed in the NAAQS Control Measures PAA will achieve compliance with the 2008 Pb NAAQS. This demonstration meets all applicable legal requirements.

**Other PAA Comments**

In addition to the six (6) PAA comments summarized above, the BCC comment letter includes a discussion about assertions made by Berks County in its appeal of Exide's TVOP regarding the past installation of Polytetrafluoroethylene (PTFE) bags in dust collectors by Exide. The BCC conclude this discussion by stating their opinion of what

permitting requirements would apply *if* Exide later proposes to install PTFE bags in the main smelter stack or if Exide has done this in the past. Again, as the BCC comments acknowledge, Exide is not proposing any modification or new controls for the emission units that exhaust through the main smelter stack. Such conjecture about what might have happened in the past, or what might happen in the future, is irrelevant to PADEP's consideration of the NAAQS Control Measures PAA. PADEP should disregard those comments entirely.

BCC Consultant Comments on the AQMR for Pb SIP Attainment Demonstration,  
March 5, 2012

*AQMR Comment #1. Exide must use EPA procedures for establishing background concentrations and must also use DEP samplers for this purpose. As a result of this analysis, additional reductions will be required from the point sources to show compliance.*

Exide did, in fact, follow appropriate U.S. EPA procedures in establishing the recommended background concentration presented in the AQMR. Use of the wind speed "filters" is a technically appropriate means of preventing the inclusion of source impacts during "calms" in the calculation of background. It is widely recognized that some of the highest ambient impacts near sources occur during periods of essentially calm winds. Application of minimum wind speed cutoff "filters" in the data analysis ensures that the data considered to represent background conditions do not include calm periods where significant source impacts could be occurring. The very fact that application of these filters makes a substantial difference in the calculations is support for the need to screen the data in this fashion. The only reason for different results to be obtained between data sets (filtered and unfiltered) would be that the unfiltered data are being influenced by source impacts during calm and low wind periods.

Technical support for consideration of this phenomenon is, in fact, contained in 40 CFR 51, Appendix W, which does not contain a specific prescribed methodology for processing monitored data, but rather the requirement is to "Determine the mean background concentration at each monitor by excluding values when the source in question is impacting the monitor."

In the simplest terms, source impacts on the Pb monitors may occur under following meteorological conditions:

1. During winds when the monitor is downwind relative to the source; and
2. During calm and low winds associated with stagnant and recirculation conditions.

Calm and low wind conditions are characterized by frequent variations in wind direction leading to dispersion of pollutants in various directions, not necessarily associated with the average wind direction recorded as part of meteorology. In addition, transport

mechanisms such as diffusion that disperse contaminants in directions other than the downwind direction increase in importance during calm / low wind conditions. In other words, a simple sector analysis of the resulting average wind directions derived during these conditions are not necessarily representative of the predominant direction of contaminant transport in that period, and therefore do not necessarily remove values where the source in question is impacting the monitor.

As described in the AQMR, there is a specific technical reason for not including the PADEP samplers in the background analysis. Unlike Exide's monitors, PADEP's monitors are not employing "sample savers" as recommended by the U.S. EPA to prevent collection of settled dust on filters outside of the designated 24-hour sampling period. Again, the difference in the monitored values collected from Exide's and PADEP's monitors that are collocated demonstrates that this phenomenon is important and manifest in this situation. The absence of sample savers on the PADEP monitors is clearly introducing a bias which should preclude their use in the background value calculation.

The comment also presents data from other historical Pb monitors in the state. Appendix W states that "If there are no monitors located in the vicinity of the source, a "regional site" may be used to determine background" suggesting that the appropriate method for this specific case would be the use of local monitoring data with the impacts from the source removed as completed for the AQMR. However, rather than impeaching Exide's background calculation, we believe the data from historical regional monitors support the background conclusion presented in the AQMR. In researching the data handling conventions used by PADEP in reporting data in Air Quality Monitoring Reports, Exide came to understand that PADEP Pb monitor analyses have historically been subject to a level of detection of  $0.03 \text{ ug/m}^3$  and that any daily sample results lower than that level have been reported at the  $0.03 \text{ ug/m}^3$  level of detection. Accordingly, it is not surprising that the BCC's background assertions using these historical data are in the  $0.03$  to  $0.04 \text{ ug/m}^3$  range. If one were to take the historical data and, using a commonly accepted approach for analyzing data below detection limits, adjust the recorded non-detect daily values to  $\frac{1}{2}$  the detection limit, for example, we would expect that the result would be very near the  $0.0244 \text{ ug/m}^3$  background value computed by Exide.

**AQMR Comment #2.** *Exide must provide a justifiable level of lead control from roadways. Choosing a control that meets the NAAQS is not sufficient justification. Again, a properly justified control level will likely require commensurate reductions in point source emissions.*

The projected degree of improvement for emissions from re-entrainment of Pb-bearing dust from traffic on in-plant traffic paths of 90% over current conditions is a reasonable expectation given the degree of enclosure central to the proposed NAAQS Control Measures. The data from Exide's Vernon, California, facility cited in the AQMR indicate, as noted by the commenter 85% less Pb in silt than observed at Exide's Reading, Pennsylvania, facility. Yet, this is but one factor in the estimation of emissions due to traffic on these roadways. The NAAQS Control Measures, through both improved enclosure (reducing airborne fugitive dust emissions from process areas which might

subsequently fallout on roadways) and added facilities to reduce the potential for tracking dust by wheeled vehicles exiting the enclosures, will have the effect of not only reducing the Pb content in the roadway silt (accounting for 85% improvement alone), but also reducing the amount of silt itself. It is not unreasonable, therefore, to expect an overall 90% improvement in the amount of Pb on the roadways (dependant on both the amount of silt AND the Pb content of the silt) and, hence, the emission rates of Pb caused by re-entrainment of that dust by traffic.

***AQMR Comment #3.** Exide must provide some assurance that their model accurately predicts ambient concentrations. They need to calibrate the model to actual measured values and explain major discrepancies between the two. The current model is worthless in this regard.*

The BCC consultant presents a number of charts comparing predicted modeled values in the baseline case with prior ambient monitor values. In summary after all those comparisons, the comment concludes that the baseline model "significantly underpredicts west of the plant, somewhat under-predicts to the east of the plant, and now we see, likely over-predicts to the south of the plant." These conclusions cannot be drawn from the data provided.

It is recognized by U.S. EPA through the work done in the recent amendments to 40 CFR 63 Subpart X for this industry that fugitive emissions are a strong contributor to ambient concentrations near these facilities. Fugitive emissions are, however, very difficult to estimate and incorporate reliably in modeling. The concept behind the NAAQS Control Measures is to remove the potential for process fugitive emissions from this facility by placing the processes in negative pressure total enclosures. The focus has been to eliminate these process fugitives in the future and direct these emissions to control devices discharging through stacks. The future attainment modeling presented in the AQMR includes existing stack emission sources which would be expected to have the most reliable performance in the dispersion model with emission rates based upon source testing; new sources which discharge the ventilation air used to collect process fugitives, with emission rates based upon the performance of the control technology; and roadway fugitive sources. The absence of strict "calibration" of the baseline case does not in any way invalidate this future attainment demonstration.

***AQMR Comment #4.** Based on this report, it is clear that the emissions and controls proposed by Exide in the plan approval application will not result in lead attainment. Exide has proposed contingency measures in case attainment is not achieved after full implementation of the plan approval. DEP should require Exide to evaluate the effectiveness of the additional measures and order them to be implemented as part of the attainment plan so as to avoid even more years of lead non-attainment.*

The conclusion drawn in this comment is wrong. To the contrary, the emissions and controls proposed by Exide will result in attainment of the 2008 Pb NAAQS. This is supported both by Exide's AQMR and the above-cited opinion of U.S. EPA that implementation of the amendments to 40 CFR 63 Subpart X is expected to result in NAAQS attainment. Pursuant to Section 172(c)(9) of the CAA PADEP must include



proposed contingency measures in its SIP submittal to U.S. EPA. Contingency measures are defined as measures that are to be implemented if the primary proposed control measures fail to attain the NAAQS by the applicable attainment date, or fail to maintain reasonable further progress (RFP) toward attainment. PADEP requested that Exide include such proposed contingency measures in Exide's submittal of the NAAQS Control Measures PAA. Exide is confident that the primary proposed NAAQS Control Measures will achieve attainment of the 2008 Pb NAAQS and that implementation of contingency measures will not need to be considered. Nevertheless, in the spirit of cooperation with PADEP in development of the SIP submittal, Exide included proposed contingency measures in the NAAQS Control Measures PAA submittal.

**AQMR Comment #5.** *Exide must properly model all ambient air and must not exclude Yuasa property without ensuring federally enforceable controls are in place to restrict access to this property.*

Exide anticipates that PADEP would require some form of federally enforceable access controls to exclude the Yuasa property from consideration as "ambient air." The BCC's comment, however, implies that the only means to provide such access control would be installation and maintenance of a fence. Other forms of access control such as surveillance and monitoring can be considered sufficiently federally enforceable. No legal requirement prevents the incorporation of the reasonable assumptions in the AQMR. The comments seek to impose the complete responsibility for attainment on a single source without consideration of alternatives that share reductions among existing sources.

**AQMR Comment #6.** *And we must stress again that the only way DEP can adequately assess future compliance with the lead NAAQS is with a greatly enhanced monitoring effort in the neighborhood of the facility. Samplers should be established at predicted maximum points of impact as well as points of maximum fugitive impact in the event of failure of the fugitive emission controls. As noted above, the Exide model may not be adequate to determine the points of maximum impact. A short-term intensive monitoring effort may be required to do that.*

Please see Exide's response to PAA Comment #5 above.

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Exide appreciates the opportunity to provide these responses to comments received by PADEP. If you have any questions please feel free to contact me by telephone at (610) 921-4170, or by email at [robin.daub@na.exide.com](mailto:robin.daub@na.exide.com).

Sincerely,  
Exide Technologies



Robin S. Daub

EHS Manager

Copy: Ms. Arleen Shulman, PADEP  
Mr. Fred Ganster – Exide  
Mr. Robert Collings – Schnader Harrison

Hanlon, Thomas

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**From:** DAUB, Robin (Reading) <robin.daub@na.exide.com>  
**Sent:** Thursday, March 29, 2012 4:21 PM  
**To:** Hanlon, Thomas  
**Cc:** MILLER, James (Reading); Collings, Robert  
**Subject:** FW: Exide

Tom,

We seem to be playing phone tag. See the responses to your questions below:

1. What pollutants are you PSD major for?

Since the Exide Reading Facility is in a source category listed in 40 CFR 52.21(b)(1)(i)(a) and has a potential to emit sulfur dioxide (SO<sub>2</sub>) at a rate greater than 100 tons per year, the facility is considered a major Prevention of Significant Deterioration (PSD) source for SO<sub>2</sub>. However, as described in Section 4.1.1.1 of the application narrative, the proposed NAAQS Control Measures Project does not result in an emissions increase of any PSD pollutant above the applicable thresholds and therefore the project does not trigger PSD requirements.

2. For the baghouses that are remaining from the current configuration, what is the difference in air flow from currently to proposed?

Exide has not proposed any changes that will result in an increase or decrease in the air flows from the baghouses remaining from the existing configuration.

3. Are HEPA filters being installed on the refinery baghouse?

The proposed NAAQS Control Measures Project does not include retrofitting the refinery baghouse with secondary HEPA filtration. PTFE membrane bags were installed in November.

Regards, Robin

*Robin S. Daub*

EHS Manager  
Exide Technologies  
Reading Recycling  
Spring Valley Road & Nolan Ave.  
P.O. Box 14294  
Reading, PA 19612  
phone: 610-921-4170  
cell: 484-358-7025

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**From:** Hanlon, Thomas [mailto:thanlon@pa.gov]  
**Sent:** Thursday, March 22, 2012 8:26 AM  
**To:** DAUB, Robin (Reading)  
**Subject:** RE: Exide RFD

Hi Robin,

I was in the Reading District Office all day yesterday and have a training course today.

Will you be in tomorrow morning? If so I will give you a call then.

Two questions I do have for you:

4. What pollutants are you PSD major for?
5. For the baghouses that are remaining from the current configuration, what is the difference in air flow from currently to proposed?

Thanks,

Tom

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February 21, 2012

Mr. William Weaver  
Air Quality Program Manager  
PA Dept. of Environmental Protection  
909 Elmerton Avenue  
Harrisburg, PA 17110-8200

**Re: Exide Technologies January 2012 Plan Approval Application**

Dear Mr. Weaver:

On behalf of the Berks County Commissioners, we have reviewed the plan approval application submitted to the DEP by Exide Technologies (Exide) in January 2012, entitled "National Ambient Air Quality Standards Control Measures Plan Approval Application". The County fully supports all the measures proposed in the plan approval application and encourages Exide to take whatever measures are necessary to bring the Laureldale area into full compliance with all National Ambient Air Quality Standards (NAAQS) as rapidly as possible. However, the plan approval mechanism is not an acceptable approach to solving the air pollution being caused by this facility and some of the assumptions Exide makes in its application appear to conflict with other publically-available data.

As a matter of regulation, DEP may not grant a plan approval to a facility causing air pollution (25 Pa. Code §127.13b(a)(1)) and the Department has already determined that Exide is causing lead air pollution. Additionally, the County has provided modeling data to the DEP showing that the current Exide operating permit does not prevent Exide from causing sulfur dioxide air pollution. (See Berks County Expert Reports to EHB, Case No. 2010-166).

The prohibition against issuing a plan approval to a facility causing air pollution also has a practical component. A plan approval is an authorization to allow a source to construct or modify an air pollution source, rather than a requirement to do so. What is required in a situation where a source is currently causing a NAAQS violation is an order to correct the problem under stringent time frames and stipulated penalties for failure to meet deadlines. This is, of course, how DEP handled Exide's violation of the previous lead NAAQS in the SIP approved in 1983. Additionally, in a plan approval application, DEP can only approve or disapprove a suggested control method; under an order DEP may dictate what controls are needed.

To that issue, a comparison of the point source emissions from DEP's model of the Exide plant, conducted in conjunction with the source oriented monitor location effort, and the point source emissions in Exide's recently submitted NAAQS demonstration model raises several questions. The reconfiguration of many of the sources' control devices makes comparisons a bit complicated, but the table below groups the sources to compare these two sets of numbers.

Comparison of Previously Tested Stacks to Exide's Attainment Model

Process	Old Stack	Emissions mg/sec	New Stack	Emissions mg/sec	Change %
Smelter	S55	1.27	S55	5.027	296%
Smelter Vent 1	S09	11.9			
Smelter Vent 2	S19	1.03			
Total		12.93	S62	7.467	-42%
Battery Shredding	S13	0.18	S13	0.399	122%
Smelter Bldg Vent	S28	0.61			
Raw Material Storage	S22	23.12	S64	19.722	General Vent. East
	S58	0.58	S63	19.138	General Vent. West
Refining Kettles	S47	1.43	S47	1.758	Refining Kettles
Totals		25.74		40.618	58%
Raw Material Storage	S23A	2.09	S23A	1.039	-50%
Slag Crushing	S46	1.59			
Slag Cooling and Storage	S29	0.88			
Total		2.47	S19	1.871	-24%
Properzi Casting	S70	0.04	S70	0.159	298%
Total Point Emissions		44.72		56.58	27%

As a first point of interest, the total point source emissions after the enhanced controls planned by Exide exceed previously demonstrated emissions by 27%. One would think that even with enhanced collection efficiencies, the system should be designed to reduce point source emissions. And while it is admittedly simplistic to equate higher point source emissions in aggregate to higher ambient impacts without accounting for the stack characteristics of the individual stacks involved, it is beyond curious that an increase of total emissions of 27% would result in a decrease of ambient impact of over 63%, the difference between the DEP design value (based on actual sampled data at a location which is clearly not the maximum impact area) and the predicted Exide value of 0.14  $\mu\text{g}/\text{M}^3$  at the maximum impact area.

These results defy common sense and DEP must closely review the modeling data to confirm that the projected emissions will, in fact, lead to NAAQS attainment. Berks County supports the enhanced collection of fugitive emissions but can not support a consequence of increasing the stack emissions from the Exide facility above those that actually occurred prior to the upgraded emission control system. Exide must commit to lowering point source emissions from those that have been demonstrated in past stack tests; otherwise, it is difficult to imagine how the NAAQS will be attained.

Even more curious is the data for the main smelter stack. Exide is not proposing any additional controls on this source, even though it represents nearly 9% of the facility point source emissions after the controls are installed. This stack has the most visible emissions and due to the stack height and plume rise, it is likely the point source with the greatest potential to deposit lead emissions the greatest distance from the plant. Of even greater concern, the emissions modeled by Exide for the main smelters are nearly three times the emissions modeled by DEP in their monitor location modeling. This is a perfect example of why DEP should issue an order to this facility rather than relying on a plan approval application. DEP could order that the main stack baghouse control efficiency be increased to reduce the main smelter stack lead emissions.

There are other sources and groups of sources shown in the above table that also predict increased emissions over those previously demonstrated. The Department must determine the reasons for these increased lead emissions in a designated non-attainment area, whether they can be justified, and whether they will result in attainment in the area. The potential emissions listed for all sources in the modeling report give this facility a lead PTE of nearly 2 tons per year, an increase of 0.41 tons above the potential based on recent stack tests. It is difficult to imagine how *increases* in point source lead emissions will lead to an attainment demonstration in this area. Additionally, in any order issued, DEP must impose significant and substantial ongoing penalties to prevent Exide from only gradually moving toward attainment rather than achieving it in the short term.

There are also components of the plan approval application that are incomplete. Plan approval applications must show the potential to emit for all regulated air pollutants. EPA has established, through the 40 CFR Part 63, Subpart X rulemakings, that secondary lead smelters emit arsenic and cadmium as well as lead. Since these are regulated HAPs, Exide must estimate their emissions from each of the stacks in the plan approval application. As the Department is aware, there are significant soil contamination issues for both lead and arsenic in the neighborhoods surrounding the plant. And could this be the reason why Exide, against all logic, does not propose to modify the main smelter control? Had they done so, the County would then legitimately be asking for an estimate of dioxin/furan emissions from that source, along with arsenic and cadmium.

As mentioned above, the County has presented data to the Department in the Title V permit appeal demonstrating that the Title V permit does not protect the 1 hour SO<sub>2</sub> NAAQS. DEP has the authority, under 25 Pa. Code §127.12(a)(6), to request that an applicant demonstrate

that NAAQS are protected, and under the circumstances in this case, the responsibility to do so. If the emission limits proposed by the applicant do not protect the 1 hour SO<sub>2</sub> NAAQS, a plan approval may not be issued (25 Pa. Code §127.13b(a)(1)). In this case, a Department order would be necessary to ensure timely compliance with both the lead and the 1 hour SO<sub>2</sub> NAAQS. The County urges DEP to issue such an order to protect air quality in the Laureldale area.

In the County's review of the Title V permit, we assert that there was insufficient monitoring of lead NAAQS compliance and that the DEP-located monitors are inappropriately sited (See Expert Reports referenced above). We again raise this objection relative to this plan approval application. 25 Pa. Code §127.13b(a)(2) requires that DEP deny a plan approval application if sufficient provision is not made for demonstrating compliance. Since the purpose of the plan approval application is to demonstrate compliance with the NAAQS, sufficient provision must be included in a plan approval (or order) to do so. At a minimum, in addition to the existing DEP monitors, a monitor must be maintained at the previous St. Mike's 1 location in order to show that the fugitive controls are working, a new monitor must be installed to monitor a high impact area predicted by Exide's newly submitted modeling report (assuming DEP concurs in the impact area assessment), and one or more fenceline monitors must be installed at areas of predicted maximum fugitive emissions or emissions resulting from equipment malfunctions. These additional source-oriented monitors must operate *at minimum* on a 3-day sampling cycle, to preclude short-term operational aberrations from providing false results and to prevent manipulation of results. Ideally, DEP should site and operate these samplers, but if resource constraints prevent the agency from doing so, DEP clearly has the authority to require Exide to maintain additional monitors under the above referenced regulation. And again, DEP has previously demonstrated this authority in the 1982 Lead SIP submittal, among other examples.

In the Title V permit appeal, the County also asserts that Exide improperly installed PTFE bags in at least one source without a plan approval. (See Expert Rebuttal Report of Fred P. Osman in above referenced EHB Case.) Exide confirms in this application that the company, in fact, did install PTFE in Baghouse C19 without a plan approval but had received a Determination from the DEP that a plan approval was not required. If the Department did make such a determination, it was improper to do so. Replacement of traditional bags with PTFE bags represents such a drastic change in collection efficiency that a plan approval is required. (See Expert Rebuttal Report of Fred P. Osman in above referenced EHB Case.) The written DEP policy setting forth the types of sources and modifications of sources that are exempt from plan approval requirements includes an air cleaning device that is not installed to comply with regulatory requirements. Since these bags were installed by Exide as part of the plan to meet the lead NAAQS, they were installed to meet regulatory requirements and do not qualify for the plan approval exemption. Furthermore, the DEP policy staff has even proposed to eliminate this exemption going forward, indicating that DEP does not intend to allow any control devices to be installed in the future without DEP review.



In the alternative, the DEP may have exempted this installation under a de minimis exemption. If that was the rationale, it cannot be supported in recognition of the air cleaning device exemption referenced above. The air cleaning device installed for a regulatory requirement must be read to trump the de minimis exemption, or else it is a redundant requirement. In almost every case, an air cleaning device results in emission decreases so there would be no need to specify this as a separate exemption and there would be no sense in carving out the regulatory requirement as a determinative factor. In the case where a control device, a flare for example, would lead to increases of another pollutant(s) (NO<sub>x</sub> and CO in the flare example), DEP would not exempt a non de minimis increase without a plan approval even if the air cleaning device were installed for a non-regulatory purpose. So again, the determinative factor is whether or not the air cleaning device was installed for a regulatory purpose. In this case, it was, and was therefore not eligible for the plan approval exemption. A table of all the possible conditions may be instructive.

**Installation of an Air Cleaning Device  
(Exemption List Effective July 26, 2003)**

De minimis Status	Installed for Regulatory Req.	Installed w/o Regulatory Req.
De minimis	Plan Approval	RfD
Greater than de minimis	Plan Approval	Plan Approval

Note that in the above table, if the de minimis status was governing, the distinction between air cleaning devices installed for regulatory reasons and those not so installed would be lost. This is an important point in that if Exide later proposes to install PTFE bags in the main smelter stack, or if they have done so previously without plan approval, they also need or will need to apply for a plan approval to do so. And in so doing they will need to estimate all regulated pollutants emitted from this stack and they will need to conduct a PSD applicability determination on that source.

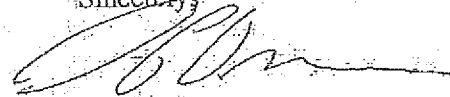
On behalf of the County, we offer the following specific objections to and comments on the subject plan approval application:

1. Because of known lead pollution and predicted SO<sub>2</sub> pollution, DEP may not issue a plan approval for this source; an order is required.
2. The point source lead emissions from all sources combined must be reduced from those previously emitted by the source.
3. DEP must address SO<sub>2</sub> pollution in any action undertaken by the Department relative to this source.
4. Other HAPs (notably arsenic and cadmium) must be addressed in any action undertaken by the DEP; at least they must be quantified.
5. DEP must ensure properly located lead samplers adequate to accurately monitor NAAQS compliance in the Laureldale area.
6. DEP must confirm that the Exide controls will lead to NAAQS compliance.

Mr. Weaver  
Re: Exide Plan Approval Application  
February 21, 2012  
Page 6 of 6

Thank you for the opportunity to comment on the plan approval application. The County will also provide additional comments on the modeling report by March 5<sup>th</sup>. While we are still evaluating this report we can tell you at this juncture that we have serious concerns with Exide's attempts to determine background concentrations. A more detailed analysis will follow.

Sincerely,



Fred P. Osman, P.E., BCEE

cc: A. Chiaruttini, counsel for Berks County  
Commissioners M. Scott, C. Leinbaugh, K. Barnhardt

Comment and Response Document  
Regarding 2/21/12 Letter from Osman Environmental Solutions, LLC on behalf of the County of Berks  
regarding Plan Approval Application No. 06-050661 for Exide Technologies

Page	Comments	Response
1	1 The County fully supports all the measures proposed in the plan approval application and encourages Exide to take whatever measures are necessary to bring the Laureldale area into full compliance with all National Ambient Air Quality Standards (NAAQS) as rapidly as possible.	DEP concurs with this comment.
2	2 the plan approval mechanism is not an acceptable approach to solving the air pollution being caused by this facility. As a matter of regulation, DEP may not grant a plan approval to a facility causing air pollution (26 Pa. Code §127.13b(e)(1)).	The federal EPA has determined that the area surrounding the Exide facility is in nonattainment of the the National Ambient Air Quality Standards for Lead. Exide is a lead emitting source in the nonattainment area. Nevertheless, Exide is not known to be in ongoing violation of any lead emissions restrictions for any particular source. DEP is currently developing a State Implementation Plan to address the lead nonattainment issue in the area surrounding the Exide facility. DEP expects that the plan approval application that is the subject of this Comment and Response document will, if issued, become a component of the the eventual SIP. Furthermore, Exide could not legally make some of the improvements expected to be needed for the SIP without first obtaining a plan approval. This statement is non-specific and the concept it advances will be addressed where specific items are raised by the commenter below.
3	3 Some of the assumptions Exide makes in its application appear to conflict with other publicly-available data.	See the response to Comment 2.
4	4 The Department has already determined that Exide is causing lead air pollution.	Third party modeling results notwithstanding, DEP is bound by law to follow the processes laid out in the federal regulations for identifying and addressing nonattainment areas. A nonattainment area has not yet been designated in the area surrounding Exide for SO <sub>2</sub> . If and when such designation is made, certain federal requirements will be triggered to address the finding of nonattainment.
5	5 The County has provided modeling data to the DEP showing that the current Exide operating permit does not prevent Exide from causing sulfur dioxide air pollution. (See Berks County Expert Reports to EHB, Case No. 2010-199).	See the response to Comment 2.
6	6 The prohibition against issuing a plan approval to a facility causing air pollution also has a practical component. A plan approval is an authorization to allow a source to construct or modify an air pollution source, rather than a requirement to do so. What is required in a situation where a source is currently causing a NAAQS violation is an order to correct the problem under stringent time frames and stipulated penalties for failure to meet deadlines. This is, of course, how DEP handled Exide's violation of the previous lead NAAQS in the SIP approved in 1983.	DEP acknowledges that additional control measures may be needed for the SIP, beyond those proposed by Exide in the plan approval application. Whether this is true will become clearer once DEP completes review of Exide's nonattainment modeling. DEP does not believe or represent that the measures proposed in the plan approval will automatically be sufficient to achieve an attainment demonstration. Nevertheless the plan approval, if approved, would allow Exide to expeditiously move ahead with key tasks related to achieving attainment.
7	7 In a plan approval application, DEP can only approve or disapprove a suggested control method; under an order DEP may dictate what controls are needed.	See the response to Comment 2.
8	8 A comparison of the point source emissions from DEP's model of the Exide plant, conducted in conjunction with the source oriented monitor location effort, and the point source emissions in Exide's recently submitted NAAQS demonstration model, raises several questions. The reconfiguration of many of the sources' control devices makes comparisons a bit complicated, but the table below groups the sources to compare these two sets of numbers (refer to comment letter table titled "Comparison of Previously Tested Stacks to Exide's Attainment Model").	See the response to Comments 9 and 10.
9	9 The total point source emissions after the enhanced controls planned by Exide exceed previously demonstrated emissions by 27%. One would think that even with enhanced collection efficiencies, the system should be designed to reduce point source emissions.	The lead emission rates used by Exide in the Air Quality Dispersion Modeling Report are based on maximum allowable emission rates, so the comparison used in the Table compares actual emission rates and maximum allowable emission rates.
10	10 While it is admittedly simplistic to equate higher point source emissions in aggregate to higher ambient impacts without accounting for the stack characteristics of the individual stacks involved, it is beyond curious that an increase of total emissions of 27% would result in a decrease of ambient impact of over 63%, the difference between the DEP design value (based on actual sampled data at a location which is clearly not the maximum impact area) and the predicted value of 0.14 ug/m <sup>3</sup> at the maximum impact area.	The Air Quality Dispersion Modeling Report, which includes the 0.14 ug/m <sup>3</sup> value is a separate document from the plan approval application and is being reviewed by the DEP modeling section. The DEP modeling section will evaluate that document to determine if the conclusions reached by Exide are acceptable.
11	11 Exide value of 0.14 ug/m <sup>3</sup> at the maximum impact area.	See the response to Comments 7 and 10.
12	12 These results defy common sense and DEP must closely review the modeling data to confirm that the projected emissions will, in fact, lead to NAAQS attainment.	The proposed plan approval includes designs to totally enclose suspected sources of fugitive lead emissions. Capturing additional fugitive emissions and directing them to a control device has the potential to slightly increase emissions from the control device. Nevertheless, projected actual emissions of lead are expected to decrease compared to the baseline actual emissions from the stacks.
13	13 Exide must commit to lowering point source emissions from those that have been demonstrated in past stack tests; otherwise, it is difficult to imagine how the NAAQS will be attained.	See the responses to Comments 10 and 12.
14	14 Berks County supports the enhanced collection of fugitive emissions but can not support a consequence of increasing the stack emissions from the Exide facility above those that actually occurred prior to the upgraded emission control system.	See the responses to Comments 7 and 9.
15	15 Even more curious is the data for the main smaller stack. Exide is not proposing any additional controls on this source, even though it represents nearly 9% of the facility point source emissions after the controls are installed.	See the responses to Comments 7 and 10.
16	16 This stack has the most visible emissions and due to the stack height and plume rise, it is likely the point source with the greatest potential to deposit lead emissions the greatest distance from the plant.	See the responses to Comments 7 and 10.
	3 the emissions modeled by Exide for the main smelters are nearly three times the emissions modeled by DEP in their 3 monitor location modeling.	See the responses to Comments 7 and 10.

Comment and Response Document  
Regarding 2/21/12 Letter from Osman Environmental Solutions, LLC on behalf of the County of Berks  
regarding Plan Approval Application No. 06-050661 for Exide Technologies

16	Comment This is a perfect example of why DEP should issue an order to this facility rather than relying on a plan approval application. DEP could order that the main stack baghouse control efficiency be increased to reduce the main smelter stack lead emissions.	Response See the response to Comment 7.
17	3 There are other sources and groups of sources shown in the above table that also predict increased emissions over those previously demonstrated. The Department must determine the reasons for these increased lead emissions in a designated non-attainment area, whether they can be justified, and whether they will result in attainment in the area.	See the response to Comment 6.
18	3 The potential emissions listed for all sources in the modeling report give this facility a PTE of nearly 2 tons per year, an increase of 0.41 tons above the potential based on recent stack tests. It is difficult to imagine how increases in point source lead emissions will lead to an attainment demonstration in this area.	See the response to Comments 9 and 10.
19	3 In any order issued, DEP must impose significant and substantial ongoing penalties to prevent Exide from only gradually moving toward attainment rather than achieving it in the short term.	See the response to Comment 7. If DEP determines that an Order is needed, DEP will determine any appropriate ongoing penalties at that time.
20	3 There are also components of the plan approval application that are incomplete. Plan approval applications must show the potential to emit for all regulated air pollutants. EPA has established, through the 40 CFR Part 63, Subpart X rulemakings, that secondary lead smelters emit arsenic and cadmium as well as lead. Since these are regulated HAPs, Exide must estimate their emissions from each of the stacks in the plan approval application.	Exide has provided baseline actual emissions and projected actual emissions for arsenic and cadmium for each of the sources in the plan approval application. These are listed in the PSD/INRSR applicability tables in the review memo.
21	3 As the Department is aware, there are significant soil contamination issues for both lead and arsenic in the neighborhoods surrounding the plant. And could this be the reason why Exide, against all logic, does not propose to modify the main smelter control? Had they done so, the County would then legitimately be asking for an estimate of discharges from that source, along with arsenic and cadmium.	See the response to Comment 7.
22	3 As mentioned above, the County has presented data to the Department in the Title V permit appeal demonstrating that the Title V permit does not protect the 1 hour SO2 NAAQS.	See the response to Comment 5.
23	3 DEP has the authority, under 25 Pa. Code §127.12(e)(6), to request that an applicant demonstrate that NAAQS are protected, and under the circumstances in this case, the responsibility to do so.	See the response to Comment 5.
24	3-4 If the emission limits proposed by the applicant do not protect the 1 hour SO2 NAAQS, a plan approval may not be issued (25 Pa. Code §127.13b(9)(1)). In this case, a Department order would be necessary to ensure timely compliance with both the lead and the 1 hour SO2 NAAQS. The County urges DEP to issue such an order to protect air quality in the Laureldale area.	See the response to Comment 5.
25	4 In the County's review of the Title V permit, we assert that there was insufficient monitoring of lead NAAQS compliance and that the DEP-located monitors are inappropriately sited (See Expert Reports referenced above). We again raise this objection relative to this plan approval application. 25 Pa. Code §127.13b(9)(2) requires that DEP deny a plan approval application if sufficient provision is not made for demonstrating compliance. Since the purpose of the plan approval application is to demonstrate compliance with the NAAQS, sufficient provision must be included in a plan approval (or order) to do so.	See the response to Comment 7.
26	4 At a minimum, in addition to the existing DEP monitors, a monitor must be maintained at the previous St. Mike's 1 location in order to show that the fugitive controls are working, a new monitor must be installed to monitor a high impact area predicted by Exide's newly submitted modeling report (assuming DEP concurs in the impact area assessment), and one or more fence-line monitors must be installed at areas of predicted maximum fugitive emissions or emissions resulting from equipment malfunctions.	See the response to Comment 26.
27	4 These additional source-oriented monitors must operate at minimum on a 3-day sampling cycle, to preclude short-term operational aberrations from providing false results and to prevent manipulation of results.	See the response to Comment 26.
28	4 Ideally, DEP should site and operate these samplers, but if resource constraints prevent the agency from doing so, DEP clearly has the authority to require Exide to maintain additional monitors under the above referenced regulation. And again, DEP has previously demonstrated this authority in the 1992 Lead SIP subtitle, among other examples.	See the response to Comment 26.
29	4 In the Title V permit appeal, the County also asserts that Exide improperly installed PTFE bags in at least one source without a plan approval. (See Expert Rebuttal Report of Fred P. Osman in above referenced EHB Case.) Exide confirms in this application that the company, in fact, did install PTFE in Baghouse C19 without a plan approval but had received a Determination from the DEP that a plan approval was not required. If the Department did make such a determination, it was improper to do so.	DEP properly determined that the rebagging of several baghouses at the facility did not require plan approval.
30	4 Replacement of traditional bags with PTFE bags represents such a drastic change in collection efficiency that a plan approval is required.	See the response to Comment 30.
31	4 The written DEP policy setting forth the types of sources and modifications of sources that are exempt from plan approval requirements includes an air cleaning device that is not installed to comply with regulatory requirements. Since these bags were installed by Exide as part of the plan to meet the lead NAAQS, they were installed to meet regulatory requirements and do not qualify for the plan approval exemption.	The policy referred to by the commenter addresses certain types of "automatic" exemptions. In contrast, DEP in this case granted a case-by-case exemption.
32	4 The DEP policy staff has even proposed to eliminate this exemption going forward, indicating that DEP does not intend to allow any control devices to be installed in the future without DEP review.	The proposed elimination of the "automatic" exemption referred to by the commenter is not intended to suggest that DEP would deny case-by-case exemptions in these situations. In fact the reason for proposing elimination of the "automatic" exemption is to ensure that case-by-case exemption reviews occur.
33	4 The DEP policy staff has even proposed to eliminate this exemption going forward, indicating that DEP does not intend to allow any control devices to be installed in the future without DEP review.	

Comment and Response Document  
Regarding 2/21/12 Letter from Osman Environmental Solutions, LLC on behalf of the County of Berks  
regarding Plan Approval Application No. 06-050661 for Exide Technologies

Comment	Response
34. In the alternative, the DEP may have exempted this installation under a de minimus exemption. If that was the rationale, it cannot be supported in recognition of the air cleaning device exemption referenced above. The air cleaning device installed for a regulatory requirement must be read to trump the de minimus exemption, or else it is a redundant requirement.	See the responses to Comments 32 and 33.
35. In almost every case, an air cleaning device results in emission decreases so there would be no need to specify this as a separate exemption and there would be no sense in carrying out the regulatory requirement as a determinative factor. In the case where a control device, a flare for example, would lead to increases of another pollutant(s) (NOx and CO in the flare example), DEP would not exempt a non de minimus increase without a plan approval even if the air cleaning device were installed for a non-regulatory purpose.	See the responses to Comments 32 and 33.
36. The determinative factor is whether or not the air cleaning device was installed for a regulatory purpose. In this case, it was, and was therefore not eligible for the plan approval exemption.	See the responses to Comments 32 and 33.
37. Note that in the above table (refer to comment letter for table illustrating commenter's logic regarding plan approval exemptions), if the de minimus status was governing, the distinction between air cleaning devices installed for regulatory reasons and those not so installed would be lost.	See the responses to Comments 32 and 33.
38. This is an important point in that if Exide later proposes to install PTFE bags in the main smelter stack, or if they have done so previously without plan approval, they also need or will need to apply for a plan approval to do so.	This comment appears to address a hypothetical future situation which is beyond the scope of this plan approval application.
39. And in so doing they will need to estimate all regulated pollutants emitted from this stack and they will need to conduct a PSD applicability determination on that source.	See the response to Comment 39.
40. Commenter's summary of main points:	
41. Because of known lead pollution and predicted SO2 pollution, DEP may not issue a plan approval for this source; an order is required.	See the responses to Comments 2 and 5.
42. The point source lead emissions from all sources combined must be reduced from those previously emitted by the source.	See the response to Comment 7.
43. DEP must address SO2 pollution in any action undertaken by the Department relative to this source.	See the response to Comment 5.
44. Other HAPs (notably arsenic and cadmium) must be addressed in any action undertaken by the DEP, at least they must be quantified.	See the response to Comment 21.
45. DEP must ensure properly located lead samplers adequate to accurately monitor NAAQS compliance in the Laureldale area.	See the response to Comment 7.
46. DEP must confirm that the Exide controls will lead to NAAQS compliance.	See the responses to Comments 2 and 7.